UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

☒ **QUARTERLY REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____.

Commission file number: 001-36284

Biocept, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**80-0943522**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

9955 Mesa Rim Road, San Diego, California
(Address of principal executive offices)

92121
(Zip Code)

(858) 320-8200
(Registrant's telephone number, including area code)

Not Applicable
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $.0001 per share	BIOC	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined by Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of August 12, 2021, there were 14,722,958 shares of the Registrant's common stock outstanding.

BIOCEPT, INC.
FORM 10-Q
FOR THE QUARTERLY PERIOD ENDED
JUNE 30, 2021

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IMPORTANT NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q, or Quarterly Report, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements included or incorporated by reference in this Quarterly Report other than statements of historical fact, are forward-looking statements. You can identify these and other forward-looking statements by the use of words such as "may," "will," "could," "anticipate," "expect," "intend," "believe," "continue" or the negative of such terms, or other comparable terminology. Forward-looking statements also include the assumptions underlying or relating to such statements.

Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth in our other filings with the Securities and Exchange Commission, or the SEC. Moreover, we operate in an evolving environment. New risk factors and uncertainties emerge from time to time and it is not possible for us to predict all risk factors and uncertainties, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Readers are cautioned not to place undue reliance on forward-looking statements. The forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they are made except as required by law. Readers should, however, review the factors and risks we describe in the reports we file from time to time with the SEC. In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date the statement is made, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and you are cautioned not to unduly rely upon these statements.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

Biocept, Inc.

Condensed Balance Sheets

	December 31, 2020	June 30, 2021 (unaudited)
Current assets:		
Cash	$ 14,367,942	$ 19,451,189
Accounts receivable, net	14,144,911	12,595,694
Inventories, net	1,929,624	3,016,342
Prepaid expenses and other current assets	2,151,527	897,370
Total current assets	32,594,004	35,960,595
Fixed assets, net	2,317,616	2,078,464
Lease right-of-use assets - operating	9,776,349	9,275,168
Lease right-of-use assets - finance	2,337,709	2,850,277
Other non-current assets	425,908	438,776
Total assets	$ 47,451,586	$ 50,603,280
Current liabilities:		
Accounts payable	$ 8,364,858	$ 5,705,805
Accrued liabilities	3,165,669	2,410,939
Current portion of lease liabilities - operating	—	53,741
Current portion of lease liabilities - finance	963,726	1,067,516
Supplier financings	—	416,471
Total current liabilities	12,494,253	9,654,472
Non-current portion of lease liabilities - operating	9,805,361	9,971,046
Non-current portion of lease liabilities - finance	1,459,550	1,625,939
Total liabilities	23,759,164	21,251,457
Commitments and contingencies (see Note 11)		
Shareholders' equity:		
Preferred stock, $0.0001 par value, 5,000,000 authorized; 2,111 shares issued and outstanding at December 31, 2020 and June 30, 2021.	—	—
Common stock, $0.0001 par value, 150,000,000 authorized; 13,397,041 issued and outstanding at December 31, 2020; 14,310,606 issued and outstanding at June 30, 2021.	1,340	1,431
Additional paid-in capital	287,217,949	292,105,446
Accumulated deficit	(263,526,867)	(262,755,054)
Total shareholders' equity	23,692,422	29,351,823
Total liabilities and shareholders' equity	$ 47,451,586	$ 50,603,280

The accompanying notes are an integral part of these unaudited condensed financial statements.

Biocept, Inc.

Condensed Statements of Operations and Comprehensive Income/(Loss)

(Unaudited)

	For the three months ended June 30,		For the six months ended June 30,	
	2020	2021	2020	2021
Net revenues	$ 917,471	$ 12,047,166	$ 2,364,020	$ 29,803,356
Costs and expenses:				
Cost of revenues	2,517,902	7,461,819	5,464,760	16,467,675
Research and development expenses	1,588,716	1,137,614	2,901,392	2,180,339
General and administrative expenses	1,911,239	3,250,859	3,815,672	6,370,663
Sales and marketing expenses	1,333,271	1,944,661	2,798,386	3,867,933
Total costs and expenses	7,351,128	13,794,953	14,980,210	28,886,610
(Loss)/income from operations	(6,433,657)	(1,747,787)	(12,616,190)	916,746
Other expense:				
Interest expense	(55,646)	(79,692)	(112,342)	(144,933)
Warrant inducement expense	—	—	(2,102,109)	—
Total other expense	(55,646)	(79,692)	(2,214,451)	(144,933)
(Loss)/income before income taxes	(6,489,303)	(1,827,479)	(14,830,641)	771,813
Income tax expense	—	—	—	—
Net (loss)/income and comprehensive (loss)/income	$ (6,489,303)	$ (1,827,479)	$ (14,830,641)	$ 771,813
Deemed dividend related to warrants down round provision	—	—	(2,774)	—
Net (loss)/income attributable to common shareholders	$ (6,489,303)	$ (1,827,479)	$ (14,833,415)	$ 771,813
Weighted-average shares outstanding used in computing net (loss)/income per share attributable to common shareholders:				
Basic	12,717,372	13,462,329	10,308,681	13,431,340
Diluted	12,717,372	13,462,329	10,308,681	13,646,789
Net (loss)/income per common share:				
Basic	$ (0.51)	$ (0.14)	$ (1.44)	$ 0.06
Diluted	$ (0.51)	$ (0.14)	$ (1.44)	$ 0.06

The accompanying notes are an integral part of these unaudited condensed financial statements.

Biocept, Inc.

Condensed Statements of Shareholders' Equity
(Unaudited)

	Common Stock		Series A Convertible Preferred Stock		Additional	Accumulated	
	Shares	Amount	Shares	Amount	Paid-in Capital	Deficit	Total
Balance at December 31, 2019	5,473,848	$ 547	2,133	$ —	$256,917,285	$(245,717,189)	$11,200,643
Stock-based compensation expense	—	—	—	—	142,964	—	142,964
Shares issued upon exercise of common stock warrants	696,141	70	—	—	2,306,638	—	2,306,708
Shares issued upon cashless exercise of common stock warrants	608,000	61	—	—	(61)	—	—
Deemed dividends related to warrants downround provision	—	—	—	—	2,774	(2,774)	—
Shares issued for March 2, 2020 financing transaction, net of issuance costs	2,300,000	230	—	—	8,565,270	—	8,565,500
Shares issued for March 4, 2020 financing transaction, net of issuance costs	1,600,000	160	—	—	6,093,401	—	6,093,561
Shares issued for exercise of December 2019 overallotment warrants, net of issuance costs	192,750	19	—	—	659,939	—	659,958
Warrant inducement expense	—	—	—	—	2,102,109	—	2,102,109
Net loss	—	—	—	—	—	(8,341,338)	(8,341,338)
Balance at March 31, 2020	10,870,739	$ 1,087	2,133	$ —	$276,790,319	$(254,061,301)	$22,730,105
Stock-based compensation expense	—	—	—	—	194,236	—	194,236
Shares issued upon exercise of common stock warrants	20,584	2	—	—	72,606	—	72,608
Shares issued for April 2020 financing transaction, net of issuance costs	2,230,000	223	—	—	9,577,074	—	9,577,297
Net loss	—	—	—	—	—	(6,489,303)	(6,489,303)
Balance at June 30, 2020	13,121,323	$ 1,312	2,133	$ —	$286,634,235	$(260,550,604)	$26,084,943

The accompanying notes are an integral part of these unaudited condensed financial statements.

Biocept, Inc.

Condensed Statements of Shareholders' Equity
(Unaudited)
(Continued)

	Common Stock		Series A Convertible Preferred Stock		Additional	Accumulated	
	Shares	Amount	Shares	Amount	Paid-in Capital	Deficit	Total
Balance at December 31, 2020	13,397,041	$ 1,340	2,111	$ —	$ 287,217,949	$ (263,526,867)	$ 23,692,422
Stock-based compensation expense	—	—	—	—	460,201	—	460,201
Shares issued upon exercise of common stock warrants	5,304	—	—	—	18,552	—	18,552
Shares issued upon conversion of preferred stock	23	—	—	—	—	—	—
Shares issued upon exercise of options	194	—	—	—	760	—	760
Net income	—	—	—	—	—	2,599,292	2,599,292
Balance at March 31, 2021	13,402,562	$ 1,340	2,111	$ —	$ 287,697,462	$ (260,927,575)	$ 26,771,227
Stock-based compensation expense	—	—	—	—	494,330	—	494,330
Shares issued for ATM transaction, net of issuance costs	908,044	91	—	—	3,913,654	—	3,913,745
Net loss	—	—	—	—	—	(1,827,479)	(1,827,479)
Balance at June 30, 2021	14,310,606	$ 1,431	2,111	$ —	$ 292,105,446	$ (262,755,054)	$ 29,351,823

The accompanying notes are an integral part of these unaudited condensed financial statements.

Biocept, Inc.

Condensed Statements of Cash Flows

(Unaudited)

	For the six months ended June 30,	
	2020	**2021**
Cash Flows from Operating Activities		
Net (loss)/income	$ (14,830,641)	$ 771,813
Adjustments to reconcile net (loss)/income to net cash (used in)/provided by operating activities:		
Depreciation and amortization	477,396	711,099
Amortization of right-of-use assets	(96,962)	720,607
Change in inventory reserve	54,202	(59,901)
Stock-based compensation	337,200	954,531
Warrant inducement expense	2,102,109	—
Loss on disposal of fixed assets	459	3,941
Increase/(decrease) in cash resulting from changes in:		
Accounts receivable, net	347,861	1,549,217
Inventory	(259,900)	(1,026,817)
Prepaid expenses and other current assets	11,232	1,876,097
Accounts payable	(4,916)	(1,921,583)
Accrued liabilities	(108,406)	(754,730)
Other non-current assets	—	(12,868)
Net cash (used in)/provided by operating activities	(11,970,366)	2,811,406
Cash Flows from Investing Activities:		
Purchases of fixed assets	(35,457)	(831,852)
Net cash used in investing activities	(35,457)	(831,852)
Cash Flows from Financing Activities:		
Net proceeds from issuance of common stock and warrants	24,236,358	3,913,745
Proceeds from exercise of common stock warrants	2,379,316	18,552
Proceeds from exercise of stock options	—	760
Proceeds from exercise of overallotment warrants	659,958	—
Payments on finance leases	(311,576)	(623,895)
Payments on supplier and other third-party financings	(206,370)	(205,469)
Net cash provided by financing activities	26,757,686	3,103,693
Net increase in Cash	14,751,863	5,083,247
Cash at Beginning of Period	9,301,406	14,367,942
Cash at End of Period	$ 24,053,269	$ 19,451,189
Supplemental Disclosures of Cash Flow Information:		
Cash paid during the period for:		
Interest	$ 112,342	$ 144,933

Non-cash Investing and Financing Activities:

During the six months ended June 30, 2020 and 2021, Biocept, Inc., or the Company, financed insurance premiums of approximately $567,000 and $622,000, respectively, through third-party financings.

Fixed assets purchased totaling approximately $703,000 and $894,000 during the six months ended June 30, 2020 and 2021, respectively, were recorded as finance lease obligations and were excluded from cash purchases in the Company's statements of cash flows (see Note 6).

The amount of unpaid fixed assets excluded from cash purchases in the Company's statements of cash flows were approximately $57,000 at June 30, 2020 and approximately $88,000 at June 30, 2021.

In January 2020, the Company issued an aggregate of 692,725 shares of its common stock pursuant to the exercise of certain warrants issued by the Company in February 2019 and March 2019, as part of a warrant repricing and exchange transaction. As part of the

warrant repricing and exchange transaction, the Company issued an aggregate of 692,725 new warrants in exchange for the exercise of the February 2019 and March 2019 warrants and received net proceeds of approximately $2.3 million. As a result of the warrant repricing, the exercise price of warrants to purchase an aggregate of 89,657 shares of common stock issued by the Company in January 2018 was adjusted from $4.05 to $3.495 per share.

In June 2020, the Company entered into an amendment of its facility lease relating to its current facility in San Diego, California to extend the term of the lease originally set to expire in July 2020 to November 2020. Pursuant to the extension of the lease term, the Company recorded an additional lease right-of-use asset and lease liability of $482,000 (see Note 6).

The accompanying notes are an integral part of these unaudited condensed financial statements.

1. The Company, Business Activities and Basis of Presentation

The Company and Business Activities

The Company was founded in California in May 1997 and is an early-stage molecular oncology diagnostics company that develops and commercializes proprietary circulating tumor cell, or CTC, and circulating tumor DNA, or ctDNA, assays utilizing a standard blood sample, or liquid biopsy. The Company's current and planned assays are intended to provide information to aid healthcare providers to identify specific oncogenic alterations that may qualify a subset of cancer patients for targeted therapy at diagnosis, progression or for monitoring in order to identify specific resistance mechanisms. Sometimes traditional procedures, such as surgical tissue biopsies, result in tumor tissue that is insufficient and/or unable to provide the molecular subtype information necessary for clinical decisions. The Company's assays, performed on blood, have the potential to provide more contemporaneous information on the characteristics of a patient's disease when compared with tissue biopsy and radiographic imaging. Additionally, commencing in October 2017, the Company's pathology partnership program, branded as Empower TC™, provides the unique ability for pathologists to participate in the interpretation of liquid biopsy results and is available to pathology practices and hospital systems throughout the United States. Further, sales to laboratory supply distributors of the Company's proprietary blood collection tubes commenced in June 2018, which allow for the intact transport of liquid biopsy samples for research use only, or RUO, from regions around the world.

The Company operates a clinical laboratory that is CLIA-certified (under the Clinical Laboratory Improvement Amendment of 1988) and CAP-accredited (by the College of American Pathologists), and manufactures cell enrichment and extraction microfluidic channels, related equipment and certain reagents to perform the Company's diagnostic assays in a facility located in San Diego, California. CLIA certification and accreditation are required before any clinical laboratory may perform testing on human specimens for the purpose of obtaining information for the diagnosis, prevention, treatment of disease, or assessment of health. The assays the Company offers are classified as laboratory developed tests under the CLIA regulations.

In July 2013, the Company effected a reincorporation to Delaware by merging itself with and into Biocept, Inc., a Delaware corporation, which had been formed to be and was a wholly owned subsidiary of the Company since July 23, 2013.

The COVID-19 pandemic continues to evolve, and the extent to which COVID-19 may impact the Company's business will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the pandemic, the emergence and impact of variants, vaccinations, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions, and the effectiveness of actions taken in the United States and other countries to contain and treat the disease. While the Company experienced increased revenue levels in 2020 and the first half of 2021 related to its COVID-19 testing business and attained net income for the first time in its operating history in the fourth quarter in 2020, and again in the first quarter of 2021, these results are not expected to be indicative of future results.

Basis of Presentation

The accompanying unaudited condensed financial statements and notes are prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP, and on the basis that the Company will continue as a going concern (see Note 2). The accompanying unaudited condensed financial statements and notes do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the possible inability of the Company to continue as a going concern.

The unaudited condensed financial statements included in this Form 10-Q have been prepared in accordance with the U.S. Securities and Exchange Commission, or SEC, instructions for Quarterly Reports on Form 10-Q. Accordingly, the condensed financial statements are unaudited and do not contain all the information required by GAAP to be included in a full set of financial statements. The balance sheet at December 31, 2020 has been derived from the audited financial statements at that date but does not include all of the information and footnotes required by GAAP for a complete set of financial statements. The audited financial statements for the year ended December 31, 2020, filed with the U.S. Securities and Exchange Commission, or SEC, with our Annual Report on Form 10-K on March 31, 2021 include a summary of our significant accounting policies and should be read in conjunction with this Form 10-Q. In the opinion of management, all material adjustments necessary to present fairly the results of operations for such periods have been included in this Form 10-Q. All such adjustments are of a normal recurring nature. The results of operations for interim periods are not necessarily indicative of the results of operations for the entire year.

On September 3, 2020, pursuant to the approval of the Company's board of directors, the Company filed a Certificate of Amendment to its Amended and Restated Certificate of Incorporation to effect a reverse stock split of the Company's outstanding common stock using a ratio of one-for-ten. As such, all references to share and per share amounts in these financial statements and accompanying notes have been retroactively restated to reflect the one-for-ten reverse stock split, except for the authorized number of shares of the Company's common stock of 150,000,000 shares, which was not affected by the one-for-ten reverse stock split.

A novel strain of coronavirus, or COVID-19, continues to spread and severely impact the economy of the United States and other countries around the world. Since March 2020, federal, state and local governmental policies and initiatives designed to reduce the transmission of COVID-19 have resulted in, among other things, a significant reduction in physician office visits, the cancellation of elective medical procedures, customers closing or severely curtailing their operations (voluntarily or in response to government orders), and the adoption of work-from-home policies, all of which have had, and the Company believes will continue to have, an impact on the Company's results of operations, financial position, and cash flows. Additionally, beginning during the second quarter of 2020, the Company experienced growing demand for COVID-19 molecular and antibody testing services and has expanded its capacity in order to satisfy such demand. As a result, operating results for the three and six months ended June 30, 2021 may not be indicative of the results that may be expected for the full year.

Significant Accounting Policies

During the three and six months ended June 30, 2021, there were no changes to our significant accounting policies as described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020.

Revenue Recognition and Accounts Receivable

The Company's commercial revenues are generated from diagnostic services provided to patient's physicians and billed to third-party insurance payers such as managed care organizations, Medicare and Medicaid and patients for any deductibles, coinsurance or copayments that may be due. The Company recognizes revenue in accordance with ASC 606, Revenue from Contracts with Customers, or ASC 606, which requires that an entity recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services.

Contracts

For its commercial revenues, while the Company markets directly to physicians and other healthcare providers, the Company provides services that benefit the patient. Patients do not typically enter into direct agreements with the Company, however, a patient's insurance coverage requirements would dictate whether or not any portion of the cost of the tests would be patient responsibility. Accordingly, the Company establishes contracts with commercial insurers in accordance with customary business practices, as follows:

- Approval of a contract is established via the order and accession, which are submitted by the patient's physician.
- The Company is obligated to perform its diagnostic services upon receipt of a sample from a physician, and the patient and/or applicable payer are obligated to reimburse the Company for services rendered based on the patient's insurance benefits.
- Payment terms are a function of a patient's existing insurance benefits, including the impact of coverage decisions with the Centers for Medicare & Medicaid Services, or CMS, and applicable reimbursement contracts established between the Company and payers, unless the patient is a self-pay patient, whereby the Company bills the patient directly after the services are provided.
- Once the Company delivers a patient's assay result to the ordering physician, the contract with a patient has commercial substance, as the Company is legally able to collect payment and bill an insurer and/or patient, regardless of payer contract status or patient insurance benefit status.
- Consideration associated with commercial revenues is considered variable and constrained until fully adjudicated, with net revenues recorded to the extent that it is probable that a significant reversal will not occur.

The Company's development services revenues are supported by contractual agreements and generated from assay development services provided to entities, such as pharma or biotech organizations, as well as certain other diagnostic services provided to physicians, and revenues are recognized upon delivery of the performance obligations in the contract.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service, or a bundle of goods or services, to the customer. For its commercial and development services revenues, the Company's contracts have a single performance obligation, which is satisfied upon rendering of services, which culminates in the delivery of a patient's assay result(s) to the ordering physician or entity. The duration of time between accession receipt and delivery of a valid assay result to the ordering physician or entity is typically less than two weeks, and for our RT-PCR COVID-19 testing, typically 48 hours or less. Accordingly, the Company elected the practical expedient and therefore, does not disclose the value of unsatisfied performance obligations.

Transaction Price

The transaction price is the amount of consideration that the Company expects to collect in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties, such as sales taxes. The consideration expected from a contract with a customer may include fixed amounts, variable amounts, or both. The Company's gross commercial revenues billed, and corresponding gross accounts receivable, are subject to estimated deductions for such allowances and reserves to arrive at reported net revenues, which relate to differences between amounts billed and corresponding amounts estimated to be subsequently collected, and is deemed to be variable although the variability is not explicitly stated in any contract. Rather, the implied variability is due to several factors, such as the payment history or lack thereof for third-party payers, reimbursement rate changes for contracted and non-contracted payers, any patient co-payments, deductibles or compliance incentives, the existence of secondary payers and claim denials. The Company estimates the amount of variable consideration using the most likely amount approach to estimating variable consideration for third-party payers, including direct patient bills, whereby the estimated reimbursement for services are established by payment histories on CPT codes for each payer, or similar payer types. When no payment history is available, the value of the account is estimated at Medicare rates, with additional other payer-specific reserves taken as appropriate. Collection periods for billings on commercial revenues range from less than 30 days to several months, depending on the contracted or non-contracted nature of the payer, among other variables. The estimates of amounts that will ultimately be realized from commercial diagnostic services for non-contracted payers require significant judgment by management.

The Company limits the amount of variable consideration included in the transaction price to the unconstrained portion of such consideration. Revenue is recognized up to the amount of variable consideration that is not subject to a significant reversal until additional information is obtained or the uncertainty associated with the additional payments or refunds is subsequently resolved. Differences between original estimates and subsequent revisions, including final settlements, represent changes in the estimate of variable consideration and are included in the period in which such revisions are made. The Company monitors its estimates of transaction price to depict conditions that exist at each reporting date. If the Company subsequently determines that it will collect more consideration than it originally estimated for a contract with a customer, it will account for the change as an increase in the estimate of the transaction price in the period identified as an increase to revenue. Similarly, if the Company subsequently determines that the amount it expects to collect from a customer is less than it originally estimated, it will generally account for the change as a decrease in the estimate of the transaction price as a decrease to revenue, provided that such downward adjustment does not result in a significant reversal of cumulative revenue recognized. Revenue recognized from changes in transaction prices was not significant during the three and six months ended June 30, 2020 and 2021. Further, although the Company believes that its estimate for contractual allowances and other reserves is appropriate, it is possible that the Company will experience an impact on cash collections as a result of the impact of the COVID-19 pandemic.

Allocate Transaction Price

For the Company's commercial revenues, the entire transaction price is allocated to the single performance obligation contained in a contract with a customer. For the Company's development services revenues, the contracted transaction price is allocated to each single performance obligation contained in a contract with a customer as performed.

Point-in-time Recognition

The Company's single performance obligation is satisfied at a point in time, and that point in time is defined as the date a patient's successful assay result is delivered to the patient's ordering physician or entity. The Company considers this date to be the time at which the patient obtains control of the promised diagnostic assay service.

Contract Balances

The timing of revenue recognition, billings and cash collections results in accounts receivable recorded in the Company's condensed balance sheets. Generally, billing occurs subsequent to delivery of a patient's test result to the ordering physician or entity, resulting in an account receivable.

Practical Expedients

The Company does not adjust the transaction price for the effects of a significant financing component, as at contract inception, the Company expects the collection cycle to be one year or less.

The Company expenses sales commissions when incurred because the amortization period is one year or less, which are recorded within sales and marketing expenses.

The Company incurs certain other costs that are incurred regardless of whether a contract is obtained. Such costs are primarily related to legal services and patient communications. These costs are expensed as incurred and recorded within general and administrative expenses.

Disaggregation of Revenue and Concentration of Risk

The composition of the Company's net revenues recognized during the three and six months ended June 30, 2020 and 2021, disaggregated by source and nature, are as follows:

	For the three months ended June 30,		For the six months ended June 30,	
	2020	2021	2020	2021
Net revenues from contracted payers*	$ 261,620	$ 6,920,315	$ 761,808	$ 13,234,199
Net revenues from non-contracted payers	579,398	5,058,939	1,396,811	16,400,102
Development services revenues	38,453	33,429	98,782	72,715
Kits and Blood Collection Tubes (BCT)	38,000	34,483	106,619	96,340
Total net revenues	$ 917,471	$ 12,047,166	$ 2,364,020	$ 29,803,356

*Includes Medicare, Medicare Advantage, and CARES Act as reimbursement amounts are fixed.

Revenues for the three and six months ended June 30, 2021 included $12.0 million and $29.6 million, respectively, in commercial test revenues, including $12.1 million and $29.0 million of revenues attributable to RT-PCR COVID-19 testing. In addition, during the three months ended June 30, 2021, the Company recorded approximately $1.1 million in additional reserves related to aged account receivable balances, which is reflected as a reduction to net revenues.

	For the three months ended June 30,		For the six months ended June 30,	
	2020	2021	2020	2021
Net commercial revenues recognized upon delivery	$ 841,018	$ 11,979,254	$ 2,158,619	$ 29,634,301
Development services revenues recognized upon delivery	38,453	33,429	98,782	72,715
Kits and Blood Collection Tubes (BCT)	38,000	34,483	106,619	96,340
Total net revenues	$ 917,471	$ 12,047,166	$ 2,364,020	$ 29,803,356

At December 31, 2020 and June 30, 2021, unbilled account receivables total approximately $4.5 million and $4.3 million, respectively.

Concentrations of credit risk with respect to revenues are primarily limited to geographies to which the Company provides a significant volume of its services, and to specific third-party payers of the Company's services such as Medicare, insurance companies, and other third-party payers. The Company's client base consists of many geographically dispersed clients diversified across various customer types.

The Company's third-party payers that represent more than 10% of total net revenues in any period presented, as well as their related net revenue amount as a percentage of total net revenues, during the three and six months ended June 30, 2020 and 2021 were as follows:

	For the three months ended June 30,		For the six months ended June 30,	
	2020	2021	2020	2021
Medicare and Medicare Advantage/CARES Act	30%	57%	34%	44%
Blue Cross Blue Shield	29%	25%	29%	28%

The Company's third-party payers that represent more than 10% of total net accounts receivable, and their related net accounts receivable balance as a percentage of total net accounts receivable, at December 31, 2020 and June 30, 2021 were as follows:

	December 31, 2020	June 30, 2021
Medicare and Medicare Advantage/CARES Act	35%	20%
Blue Cross Blue Shield	24%	29%
United Healthcare	6%	11%

Recent Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, "Credit Losses (Topic 326)." ASU 2016-13 requires that financial assets measured at amortized cost, such as trade receivables and investments, be represented net of expected credit losses, which may be estimated based

on relevant information such as historical experience, current conditions, and future expectation for each pool of similar financial asset. The new guidance requires enhanced disclosures related to trade receivables and associated credit losses. In May 2019, the FASB issued ASU No. 2019-05, "Financial Instruments—Credit Losses (Topic 326) Targeted Transition Relief," which allows for a transition election on certain instruments. The guidance is effective for Small Reporting Companies for fiscal years beginning after December 15, 2022 and interim periods in those fiscal years. In November 2019, the FASB issued ASU No. 2019-11 which amends certain aspects of ASU No. 2016-13, including transition relief for trouble debt restructuring, among other topics. The Company is currently evaluating the impact of this pronouncement on its financial statements.

2. Liquidity

As of June 30, 2021, the Company had $19.5 million of cash and an accumulated deficit of $262.8 million. For the year ended December 31, 2020 and the six months ended June 30, 2021, the Company incurred a net loss and net income of $17.8 million and $771,813, respectively, and had negative cash flows and cash generated from operations of $19.8 million and $2.8 million, respectively. At June 30, 2021, the Company had aggregate net interest-bearing indebtedness of $3.1 million, of which $1.5 million was due within one year, in addition to $2.4 million of other non-interest-bearing current liabilities. The Company has historically funded its operations through sales of its equity securities.

The COVID-19 testing revenue during 2020 and through the second quarter of 2021, has provided the Company with increased levels of cash inflows from operations, and it is expected to continue, albeit at lower and declining levels, throughout at least the next twelve months. As a result, the Company believes that based on its current and planned cash usage, along with current COVID-19 testing revenues, its cash balances will support operations through the third quarter of 2022. As such, the Company determined that it is not probable based on projected cash flows that substantial doubt about the Company's ability to continue as a going concern exists for the one-year period following the date that the financial statements for the three and six months ended June 30, 2021 were issued. The Company's determination was based on estimates regarding expected COVID-19 testing volumes, which are uncertain and subject to change as more individuals are expected to be vaccinated and as the pandemic subsides. The Company used all information currently available to make this determination.

Historically, the Company's principal sources of cash have included proceeds from the issuance of common and preferred stock, proceeds from the exercise of warrants to purchase common stock, proceeds from the issuance of debt, and revenues from laboratory services. The Company's principal uses of cash have included cash used in operations, payments relating to purchases of property and equipment and repayments of borrowings. The Company expects that the principal uses of cash in the future will be for continuing operations, hiring of sales and marketing personnel and increased sales and marketing activities, funding of research and development, capital expenditures, and general working capital requirements. The Company expects that, as revenues grow, sales and marketing and research and development expenses will continue to grow, albeit at a slower rate and, as a result, the Company will need to generate significant growth in net revenues to achieve and sustain income from operations.

In order to meet its long-term operating requirements beyond the next twelve months, the Company will need, among other things, additional capital resources. Until the Company can generate significant cash from operations, including assay revenues, management's plans to obtain such resources for the Company include proceeds from offerings of the Company's equity securities or debt, cash received from the exercise of outstanding common stock warrants, or transactions involving product development, technology licensing or collaboration. The Company cannot provide any assurances that such additional funds will be available on reasonable terms, or at all.

In January 2020, the Company issued an aggregate of 692,725 shares of its common stock pursuant to the exercise of certain warrants issued by the Company in February 2019 and March 2019, as part of a warrant repricing and exchange transaction. As part of the warrant repricing and exchange transaction, the Company issued an aggregate of 692,725 new warrants in exchange for the exercise of the February 2019 and March 2019 warrants and received net proceeds of approximately $2.3 million. As a result of the warrant repricing, the exercise price of warrants to purchase an aggregate of 89,657 shares of common stock issued by the Company in January 2018 was adjusted from $4.05 to $3.495 per share.

During the three months ended June 30, 2021, the Company received net cash proceeds of approximately $3.9 million from the sales of 908,044 shares of common stock at a weighted average sale price of $4.67 per share, using the Company's at-the-market equity facility initiated in May 2021.

3. Sales of Equity Securities

In January 2020, the Company issued an aggregate of 692,725 shares of its common stock pursuant to the exercise of certain warrants issued by the Company in February 2019 and March 2019, as part of a warrant repricing and exchange transaction. As part of the warrant repricing and exchange transaction, the Company issued an aggregate of 692,725 new warrants in exchange for the exercise of the February 2019 and March 2019 warrants and received net proceeds of approximately $2.3 million. As a result of the warrant repricing, the exercise price of warrants to purchase an aggregate of 89,657 shares of common stock issued by the Company in January 2018 was adjusted from $4.05 to $3.495 per share. In January 2020, the Company issued 192,750 shares of common stock pursuant to the partial exercise of the underwriters' overallotment option from the Company's December 2019 public offering. The net proceeds to the Company from the overallotment closing, was approximately $700,000. The warrants issued in connection with the warrant repricing and exchange transaction were considered inducement warrants and are classified in equity. In addition, the modification expense associated with the change in fair value due to the repricing of February and March 2019 warrants is recorded as inducement expense, which was approximately $191,000. The fair value of the warrants issued was approximately $1.9 million. The fair value of the inducement warrants and warrant modification of $2.1 million was expensed as warrant inducement expense in the accompanying condensed statements of operations for the six months ended June 30, 2020.

On March 2, 2020, the Company sold and issued 2,300,000 shares of its common stock at a negotiated purchase price of $4.00 per share in a registered direct offering and received net cash proceeds of approximately $8.6 million after deducting placement agent fees and other expenses.

On March 4, 2020, the Company sold and issued 1,600,000 shares of its common stock at a negotiated purchase price of $4.10 per share in a registered direct offering and received net cash proceeds of approximately $6.1 million after deducting placement agent fees and other expenses.

On April 16, 2020, the Company sold and issued 2,230,000 shares of its common stock at a negotiated purchase price of $4.60 per share in a registered direct offering and received net cash proceeds of approximately $9.6 million after deducting placement agent fees and other expenses.

On May 12, 2021, the Company entered into a Controlled Equity Offering^{SM} Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co. (the "Sales Agent"), under which the Company may issue and sell from time to time up to $25,000,000 of its common stock through or to the Sales Agent, as sales agent or principal. The issuance and sale of these shares under the Sales Agreement, if any, is subject to the continued effectiveness of the Company's shelf registration statement on Form S-3, filed with the Securities and Exchange Commission on April 24, 2020. Sales of the Company's common stock, under the Sales Agreement are made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act of 1933, as amended. Each time the Company wishes to issue and sell common stock under the Sales Agreement, it notifies the Sales Agent of the number of shares to be issued, the dates on which such sales are anticipated to be made and any minimum price below which sales may not be made. Once the Company has so instructed the Sales Agent, unless the Sales Agent declines to accept the terms of the notice, the Sales Agent has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of the Sales Agent under the Sales Agreement to sell the Company's common stock are subject to a number of conditions that the Company must meet. The offering of common stock pursuant to the Sales Agreement will terminate upon the earlier of (1) the sale of all common stock subject to the Sales Agreement and (2) termination of the Sales Agreement as permitted therein. The Sales Agreement may be terminated by the Company at any time upon ten days' notice. The Sales Agent may terminate the Sales Agreement at any time upon ten days' prior notice. The Sales Agent is entitled to compensation from the Company at a fixed commission rate equal to 3.0% of the gross sales price per share of any common stock sold under the Sales Agreement. During the three months ended June 30, 2021, the Company sold and issued 908,044 shares of its common stock at a weighted average purchase price of $4.67 under the Sales Agreement and received net cash proceeds of approximately $3.9 million after deducting sales agent commissions and other offering costs.

4. Fair Value Measurement

The estimated nonrecurring fair value measurements associated with fixed asset purchases recorded as right-of-use asset finance lease obligations totaling approximately $894,000 during the six months ended June 30, 2021 were calculated as the present value of the lease payments based on contractual payment amounts and estimated market rates. Upon adoption of guidance in ASC Topic 842 Leases, the estimated fair value of the right-of-use operating lease asset was recorded based on the present value of future lease payments based on contractual payment amounts and estimated market rates in effect.

Other Fair Value Measurements

As of the closing of the Company's January 2020 warrant repricing and exchange transaction, the estimated grant date fair value of approximately $2.80 per share associated with the warrants to purchase up to 692,725 shares of common stock issued in the transaction, or a total of approximately $1.9 million, was recorded as a warrant inducement expense with an offset to additional paid-in capital. All warrants issued in this warrant inducement transaction have an exercise price of $3.495 per share, became exercisable beginning 6 months from issuance and expire 5.5 years from the date of issuance. The fair value of the warrants was estimated using a Black-Scholes model with the following assumptions:

Beginning stock price	$	3.00
Exercise price	$	3.495
Expected dividend yield		0.00%
Discount rate-bond equivalent yield		1.66%
Expected life (in years)		5.50
Expected volatility		150.33%

In addition to the inducement warrants issued in the Company's January 2020 warrant repricing and exchange transaction, the Company adjusted the exercise prices of the February 2019 and March 2019 warrants from $12.00 and $12.50, respectively, to $3.495 to induce exercise of these warrants. This price modification triggered the requirement for modification accounting of these warrants. Based on the applicable guidance, the modification required the Company to value the modified February 2019 and March 2019 warrants immediately prior to the modification of the exercise price and immediately following the modification and record the difference between the resulting two values as warrant inducement expense.

The estimated fair value prior to modification of the February 2019 and March 2019 warrants was approximately $2.70 per share, whereas the estimated fair value of the February 2019 warrants increased to $2.90 due to the adjustment of the exercise price, and the estimated fair value of the March 2019 warrants increased to $3.00 per share. There were 216,725 February 2019 warrants and 476,000 March 2019 warrants eligible for this price modification and the resulting modification expense recorded as warrant inducement expenses were $60,000 and $130,000, respectively.

5. Balance Sheet Details

The following provides certain balance sheet details:

	December 31, 2020	June 30, 2021
Inventories		
Raw materials	$ 1,235,620	$ 2,328,339
Subassemblies	691,126	675,072
Finished goods	2,878	12,931
	$ 1,929,624	$ 3,016,342
Fixed Assets		
Machinery and equipment	$ 2,974,320	$ 3,035,532
Furniture and office equipment	156,987	156,987
Computer equipment and software	2,428,211	2,675,926
Leasehold improvements	570,173	485,360
Construction in process	761,221	17,396
Total fixed assets, gross	6,890,912	6,371,201
Less accumulated depreciation and amortization	(4,573,296)	(4,292,737)
Total fixed assets, net	$ 2,317,616	$ 2,078,464
Accrued Liabilities		
Accrued payroll	$ 452,118	$ 467,451
Accrued vacation	868,557	945,572
Accrued bonuses	1,022,421	619,031
Accrued sales commissions	456,526	220,139
Accrued other	366,047	158,746
Total accrued liabilities	$ 3,165,669	$ 2,410,939

6. Leases

Effective January 1, 2019, the Company adopted US GAAP accounting rules in ASC Topic 842, Leases (ASC 842), using the modified retrospective method. The Company elected to follow the package of practical expedients provided under the transition guidance within ASC 842, and accordingly, did not reassess whether any expired or existing contracts are or contain leases, did not reassess expired or existing leases, and did not reassess initial direct costs for any existing leases. Upon adoption, the Company recorded an operating lease right-of-use asset and an operating lease liability on the balance sheet. In addition, assets under equipment leases previously classified as capital leases within Fixed Assets on the Company's balance sheet were reclassified to finance lease right-of-use assets upon adoption of the guidance. Right-of-use assets and obligations were recognized based on the present value of remaining lease payments over the lease term. As the Company's operating lease does not provide an implicit rate, an estimated incremental borrowing rate was used based on the information available at the adoption date in determining the present value of lease payments. Operating lease expense is recognized on a straight-line basis over the lease term. Variable lease costs such as common area costs and other operating costs are expensed as incurred. Leases with an initial term of 12 months or less are not recorded on the balance sheet.

Finance Leases

The Company leases certain laboratory equipment under arrangements previously accounted for as capital leases, classified on the Company's balance sheet as fixed assets and related lease liabilities and depreciated on a straight-line basis over the lease term. Upon adoption of ASC 842, leased equipment previously classified as fixed assets totaling $1.4 million in net book value were reclassified to lease right-of-use assets in accordance with the guidance. The equipment under finance leases is depreciated on a straight-line basis over periods ranging from approximately 3 to 7 years. The total gross value of equipment capitalized under such lease arrangements was approximately $4,639,000 and $5,533,000 at December 31, 2020 and June 30, 2021, respectively. Total accumulated depreciation related to equipment under finance leases was approximately $2,302,000 and $2,683,000 at December 31, 2020 and June 30, 2021, respectively. Total depreciation expense related to equipment under finance leases during the three months ended June 30, 2020 and 2021 was approximately $130,000 and $209,000, and was approximately $274,000 and $381,000 during the six months ended June 30, 2020 and 2021, respectively.

In February 2020, the Company entered into finance leases for a total capitalized amount of $197,000 for three pieces of equipment. Under the terms of the equipment financing agreement, which was accounted for as a finance lease transaction, the principal balance plus interest for the equipment are to be repaid in full in installments ranging from 48 to 60 monthly installments of $4,532 totaling approximately $265,000 through January 2025. In addition, in March 2020, the Company entered into a finance lease for a capitalized amount of $11,000 for an additional piece of equipment. Under the term of the equipment financing agreement, the principal amount plus interest are to be repaid in 48 monthly installments of $288 totaling approximately $14,000 through February 2024.

In April 2020, the Company entered into finance leases for a capitalized amount of $161,000 for laboratory testing equipment and manufacturing tooling. Under the terms of the equipment financing agreement, which was accounted for as a finance lease transaction, the principal balance plus interest for the equipment are to be repaid in full in 60 monthly installments of $3,337 totaling approximately $185,000 through March 2025.

In June 2020 the Company entered into finance leases for a capitalized amount of $334,000 for equipment and laboratory management software. Under the terms of the equipment financing agreement, which was accounted for as a finance lease transaction, the principal balance plus interest for the equipment are to be repaid in full in installments ranging from 36 to 60 monthly installments of $8,966 totaling approximately $469,000 through June 2025.

During the six months ended June 30, 2021, the Company entered into finance leases for a total capitalized amount of $894,000 for four pieces of equipment. Under the terms of the financing agreements, which were accounted for as finance lease transactions, the principal balance plus interest for the equipment are to be paid in installments ranging from 36 to 60 monthly installments of $21,330 totaling approximately $1,064,000 through March 2026.

Operating Lease

The Company leases its primary laboratory and office facilities in San Diego, California. In accordance with the ASC 842 guidance, the facility lease is classified as an operating lease. From its inception until December 2020, the Company's primary facilities were located at 5810 Nancy Ridge Road in San Diego, California (Nancy Ridge Facility) and subject to a lease agreement dated March 31, 2004. The average monthly cash payment for the operating lease was approximately $120,000 per month, and the lease term expired on July 31, 2020, but was extended as stated below. The Company recorded a lease right-of-use asset and lease liability of $1,930,000 and $2,201,000, respectively, as of January 1, 2019, based on present value of payments and an incremental borrowing rate of 4.5%.

On June 5, 2020, the Company entered into a fifth amendment (the "Amendment") to its lease agreement relating to the Nancy Ridge Facility. Pursuant to the Amendment, the expiration date of the lease was extended from July 31, 2020 to November 30, 2020. The monthly base rent during the extended term was the then-current monthly rate paid by the Company. The Company agreed to pay additional rent and all other charges as set forth in the lease through the expiration date. Pursuant to the extension of the expiration date of the lease, the Company recorded an additional lease right-of-use asset and lease liability of $482,000. In order to allow the Company adequate time to move its operations to its new facility, the Company entered into an additional extension related to the facility extending the lease until December 11, 2020 at the prorated amount of the then-current rent.

On June 1, 2020, the Company entered into a lease for a 39,000 square foot headquarters, manufacturing and laboratory facility at 9955 Mesa Rim Road in San Diego, California. The lease commenced on December 1, 2020 and is for a term of 127 months from the commencement date. The lease includes a rent abatement period of seven months, from January 2021 through July of 2021, during which period the Company is exempted from paying the amount of base rent of $111,000. In addition, the lease stipulates an additional two months of lease abatement period in the event that the property is sold within the first six months of the initial lease period. In March 2021, the Company was notified that the original landlord has sold the building, hence the Company is eligible for an additional two months of rent abatement period. In addition, the landlord agreed to pay for certain preapproved leasehold improvement costs through a one-time leasehold improvement allowance of approximately $1,586,000, and an additional leasehold improvement allowance of approximately $1,586,000. The amount of additional leasehold improvement allowance of approximately $1,586,000 is to be paid back to the landlord during the term of the lease by the Company, amortized at an agreed upon annual rate of 7% as an additional rent payment of approximately $18,000 per month. The average monthly cash payment including payment for the additional leasehold improvement allowance for the lease is approximately $140,000 per month with initial monthly lease payments of $128,000 per month. The Company recorded a lease right-of-use asset and lease liability of $9,776,000 and $9,805,000, respectively, as of December 31, 2020, based on the present value of payments and an incremental borrowing rate of 12%. As the Company's lease did not provide an implicit rate, the Company estimated the incremental borrowing rate based on the credit quality of the Company and by comparing interest rates available in the market for similar borrowings. The Company recorded $1,631,000 in other current assets related to reimbursable leasehold improvement costs incurred as of December 31, 2020. All reimbursable leasehold improvement costs were reimbursed by the landlord as of June 30, 2021.

In addition, the Company reviews agreements at inception to determine if they include a lease, and when they do, uses its incremental borrowing rate or implicit interest rate to determine the present value of the future lease payments.

The following schedule sets forth the components of right-of-use lease assets as of December 31, 2020 and June 30, 2021 as follows:

	December 31, 2020	June 30, 2021
Lease right-of-use assets:		
Operating	9,776,349	$ 9,275,168
Finance	2,337,709	2,850,277
Total	$ 12,114,058	$ 12,125,445

The following schedule sets forth the current portion of operating and finance lease liabilities as of December 31, 2020 and June 30, 2021:

	December 31, 2020	June 30, 2021
Current portion of lease liability:		
Operating	—	$ 53,741
Finance	963,726	1,067,516
Total	$ 963,726	$ 1,121,257

The following schedule sets forth the long-term portion of operating and finance lease liabilities as of December 31, 2020 and June 30, 2021:

	December 31, 2020	June 30, 2021
Long-term portion of lease liability:		
Operating	$ 9,805,361	$ 9,971,046
Finance	1,459,550	1,625,939
Total	$ 11,264,911	$ 11,596,985

The following schedule represents the components of lease expense for the three and six months ended June 30, 2020 and 2021:

	For the three months ended June 30,		For the six months ended June 30,	
	2020	2021	2020	2021
Lease cost				
Finance lease cost				
Amortization of right-of-use assets	$ 129,576	$ 209,181	$ 274,106	$ 381,506
Interest on lease liabilities	50,975	74,751	107,672	139,992
Operating lease cost	318,005	414,384	636,010	829,186
Total	$ 498,556	$ 698,316	$ 1,017,788	$ 1,350,684

The following schedule sets forth the remaining future minimum lease payments outstanding under finance and operating leases, as well as corresponding remaining sales tax and maintenance obligation payments that are expensed as incurred and due within each respective year ending December 31, as well as the present value of the total amount of the remaining minimum lease payments as of June 30, 2021:

	Finance		Operating
	Minimum Lease Payments	Maintenance and Sales Tax Obligation Payments	Minimum Lease Payments
2021	$ 600,649	$ 57,777	$ 442,454
2022	1,020,965	101,578	1,586,210
2023	873,830	85,427	1,629,025
2024	464,328	55,806	1,671,841
Thereafter	209,372	16,184	11,995,434
Total payments	3,169,144	316,772	17,324,964
Less amount representing interest	(475,689)	—	(7,300,177)
Present value of payments	$ 2,693,455	$ 316,772	$ 10,024,787

The following schedule sets forth supplemental cash flow information related to operating and finance leases as of June 30, 2020 and 2021:

	For the six months ended June 30,	
	2020	2021
Other information		
Operating cash flows from finance leases	$ 107,672	$ 139,992
Operating cash flows from operating leases	$ 732,973	$ 106,272
Financing cash flows from finance leases	$ 311,576	$ 623,895

The aggregate weighted average remaining lease term was 3.11 years on finance leases and 9.92 years on operating leases as of June 30, 2021. The aggregate weighted average discount rate was 17.66% on finance leases and 12.0% on operating leases as of June 30, 2021. During the six months ended June 30, 2021, the Company added $894,000 of right of use assets in connection with finance lease liabilities.

7. Stock-Based Compensation

Equity Incentive Plans

The Company maintains the Biocept, Inc. Amended and Restated 2013 Equity Incentive Plan, or the 2013 Plan, which is a successor to the Company's prior equity incentive plan, the 2007 Equity Incentive Plan, or the 2007 Plan.

At the Company's annual meeting of stockholders held on July 16, 2021, the Company's stockholders approved amendments to the 2013 Plan, which included an increase in the number of non-inducement shares of common stock authorized for issuance under the

2013 Plan by 1,300,000 shares. In December 2020, the Company's board of directors approved an increase of the number of inducement shares of common stock authorized for issuance under the 2013 Plan by 750,000 shares. As of June 30, 2021, 762,421 shares of the Company's common stock were authorized exclusively for the issuance of stock awards to new employees who have not previously been an employee or director of the Company, except following a bona fide period of non-employment, as an inducement material to the individual's entering into employment with the Company, as defined under applicable Nasdaq Listing Rules.

As of June 30, 2021, under all plans, a total of 1,036,409 non-inducement shares were authorized for issuance, 991,601 shares had been issued with 996,672 non-inducement stock options and restricted stock units, or RSUs, underlying outstanding awards, and 62,125 non-inducement shares were available for grant. As of June 30, 2021, 761,836 inducement shares were authorized for issuance, 413,462 inducement shares had been issued under the 2013 Plan, with 380,222 inducement stock options and RSUs underlying outstanding awards and 381,530 inducement shares were available for grant under the 2013 Plan.

Stock Options

A summary of stock option activity for the six months ended June 30, 2021 is as follows:

	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term in Years
Outstanding at December 31, 2020	1,078,704	$ 11.64	9.36
Granted	318,410	$ 5.17	
Exercised	(194)	3.91	
Cancelled/forfeited/expired	(72,633)	$ 13.95	
Outstanding at June 30, 2021	1,324,287	$ 9.90	9.13
Vested and unvested expected to vest at June 30, 2021	1,298,653	$ 10.00	9.13

The intrinsic values of options outstanding, options exercisable, and options vested and unvested expected to vest at December 31, 2020 and June 30, 2021 were each $4,714 and $856.

The assumptions used in the Black-Scholes pricing model for stock options granted during the six months ended June 30, 2021 were as follows:

Stock and exercise prices	$4.52 - $6.03
Expected dividend yield	0.00%
Discount rate-bond equivalent yield	0.52% – 1.15%
Expected life (in years)	5.39 – 5.98
Expected volatility	163.1% - 170.1%

Restricted Stock

A summary of RSU activity for the six months ended June 30, 2021 is as follows:

	Number of Shares	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2020	36	$ 4,158
Granted	—	—
Vested and issued	—	—
Forfeited	—	—
Outstanding at June 30, 2021	36	$ 4,158
Vested and unvested expected to vest at June 30, 2021	36	$ 4,158

At June 30, 2021, the intrinsic values of RSUs outstanding and RSUs unvested and expected to vest were each approximately $200. Of the 36 RSUs outstanding at June 30, 2021, all were fully vested.

Stock-based Compensation Expense

The following table presents the effects of stock-based compensation related to equity awards to employees and non-employees on the unaudited condensed statements of operations and comprehensive loss during the periods presented:

	For the three months ended June 30,		For the six months ended June 30,	
	2020	2021	2020	2021
Stock Options				
Cost of revenues	$ 30,752	$ 112,591	$ 53,565	$ 206,855
Research and development expenses	29,082	49,771	53,517	94,087
General and administrative expenses	103,345	262,450	197,759	521,813
Sales and marketing expenses	31,057	69,518	32,359	131,776
Total expenses related to stock options	$ 194,236	$ 494,330	$ 337,200	$ 954,531

As of June 30, 2021, total unrecognized share-based compensation expense related to unvested stock options and RSUs was approximately $4,855,541 and is expected to be recognized over a weighted-average period of approximately 2.66 years.

8. Common Stock Warrants Outstanding

A summary of equity-classified common stock warrant activity for the six months ended June 30, 2021 is as follows:

	Number of Shares	Weighted Average Exercise Price Per Share	Average Remaining Contractual Term in Years
Outstanding at December 31, 2020	997,167	$ 35.48	3.3
Issued	—	—	
Exercised	(5,304)	3.50	
Expired	(3,877)	1,170.00	
Outstanding at June 30, 2021	987,986	$ 31.20	2.9

All warrants outstanding at December 31, 2020 and June 30, 2021 are exercisable.

Warrants issued in the February 2019 financing transaction have an expiration date of February 12, 2024, warrants issued in the March 2019 transaction have an expiration date of September 19, 2024, warrants issued in the May 2019 inducement offering have an expiration date of December 2, 2024, warrants issued in December 2019 have an expiration date of December 11, 2024, and warrants issued in the January 2020 inducement offering have an expiration date of July 10, 2025.

The intrinsic value of equity-classified common stock warrants outstanding at December 31, 2020 and June 30, 2021 was $243,000 and $173,000, respectively.

9. Net Loss per Common Share

Basic and diluted net income (loss) per common share is determined by dividing net loss applicable to common shareholders by the weighted-average common shares outstanding during the period. Because there is a net loss attributable to common shareholders for the three and six months ended June 30, 2020 and the three months ended June 30, 2021, the outstanding RSUs, warrants, and common stock options have been excluded from the calculation of diluted loss per common share because their effect would be anti-dilutive. For the six months ended June 30, 2021, there is net income attributable to common shareholders and, as a result, 256,461 warrants and 582 options in the money were included in the calculation of dilutive weighted average shares. As these shares were in the money at June 30, 2021, an additional 215,449 shares were included in the calculation of diluted net income per share.

The following potentially dilutive securities have been excluded from the computations of diluted weighted-average shares outstanding for the periods presented, as they would be anti-dilutive:

	For the six months ended June 30,	
	2020	2021
Common warrants outstanding	1,506,491	987,986
RSUs outstanding	36	36
Convertible preferred stock outstanding (number of common stock equivalents)	47,139	46,651
Common options outstanding	257,171	1,324,675
Total anti-dilutive common share equivalents	1,810,837	2,359,348

10. Commitments and Contingencies

In the normal course of business, the Company may be involved in legal proceedings or threatened legal proceedings. The Company is not party to any legal proceedings or aware of any threatened legal proceedings that are expected to have a material adverse effect on its financial condition, results of operations or liquidity.

During the three months ended June 30, 2020 and 2021, total expense recorded in the Company's unaudited condensed statements of operations and comprehensive loss for sales tax and maintenance obligations associated with equipment financing arrangements was approximately $30,000 and $43,000, respectively, with approximately $62,000 and $87,000 recorded during the six months ended June 30, 2020 and 2021, respectively. At December 31, 2020 and June 30, 2021, approximately $75,000 and $79,000, respectively, of such sales tax and maintenance obligations incurred but not paid were recorded in accrued other liabilities in the Company's balance sheet (see Note 5). Future amounts totaling $316,772 for sales tax and maintenance obligations associated with financed equipment were due under equipment financing arrangements at June 30, 2021, which will be expensed as incurred (see Note 6).

11. Related Party Transactions

A member of the Company's management is the controlling person of Aegea Biotechnologies, Inc., or Aegea. On September 2, 2012, the Company entered into an Assignment and Exclusive Cross-License Agreement, or the Cross-License Agreement, with Aegea. The Company received payments totaling approximately $26,000 and $36,000 during the years ended December 31, 2019 and 2020, respectively, from Aegea as reimbursements for shared patent costs under the Cross-License Agreement. On December 11, 2019, the Company entered into a First Amendment to Assignment and Exclusive Cross-License Agreement with Aegea pursuant to which the Company obtained a royalty bearing license for a certain patent. The Company agreed to pay Aegea, effective January 1, 2019, a royalty of 10% on the Company's sale of research use only, or RUO, and import research use only reagents and kits in the field of oncology, where the sample types are tissue, whole blood, bone marrow, cerebrospinal fluid or derivatives of any of the foregoing. As of December 31, 2020 and June 30, 2021, the Company has accrued approximately $2,900 and $1,700 for royalty expenses, respectively, related to this arrangement. On June 3, 2020, the Company entered into a development agreement with Aegea focused on the co-development by Biocept and Aegea of a highly sensitive PCR-based assay designed by Aegea for detecting the COVID-19 virus. Pursuant to the agreement, the Company will receive compensation for development services performed based on time and materials expended. During the three and six months ended June 30, 2021, the Company recorded development service revenues of approximately $15,000 and $60,000, respectively, and had approximately $22,000 accounts receivable due from Aegea as of June 30, 2021 related to this agreement. In February 2021, the Company entered into a supply agreement with Aegea for a new PCR-based COVID-19 assay kit designed by Aegea and co-developed by Aegea and the Company. Under the agreement, Aegea will supply the COVID-19 assay kit to the Company for validation in its CLIA-certified, CAP-accredited high-complexity molecular lab and subsequent commercialization of a laboratory developed test (LDT). In the three and six months ended June 30, 2021, there has been no amounts exchanged under this agreement.

12. Subsequent Events

From June 30, 2021 through the issuance of the financial statements, the Company sold 412,009 shares of its common stock at a weighted average purchase price of $4.14 under the Sales Agreement and received net cash proceeds of approximately $1.7 million after deducting sales agent commissions.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited condensed financial statements and related notes included in this Quarterly Report on Form 10-Q and the audited financial statements and notes thereto as of and for the year ended December 31, 2020 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our Annual Report on Form 10-K for the year ended December 31, 2020, filed with the Securities and Exchange Commission on March 31, 2021. Past operating results are not necessarily indicative of results that may occur in future periods.

Company Overview

We are an early-stage molecular oncology diagnostics company that develops and commercializes proprietary circulating tumor cell, or CTC, and circulating tumor nucleic acid including circulating tumor DNA, or ctDNA, and circulating tumor RNA, or ctRNA, assays using a standard blood sample, or "liquid biopsy." Effective January 2020, we also adapted and validated this technology for commercial use in cerebrospinal fluid, or CSF, to identify tumor cells that have metastasized to the central nervous system, or CNS, in patients with advanced lung cancer or breast cancer. In April 2021, we rebranded our CSF version of the cell-based Target Selector™ assay as CNSide™.

In June 2020, to respond to a national public health emergency precipitated by the COVID-19 pandemic, we introduced molecular testing for SARS-CoV2, the virus responsible for COVID-19, using a United States Food and Drug Administration, or FDA, Emergency Use Authorization, or EUA, based "RT-PCR" method developed by Thermo-Fisher.

In June 2020, we entered into a development agreement with Aegea Biotechnologies, Inc., or Aegea, focused on the co-development by us and Aegea of a highly sensitive PCR-based assay designed by Aegea for detecting the COVID-19 virus. Pursuant to the development agreement, we receive compensation for development services performed based on time and materials expended. In February 2021, we entered into a supply agreement with Aegea for the PCR-based COVID-19 assay kit. Under the supply agreement, Aegea will supply the COVID-19 assay kit to us for validation in our high-complexity molecular clinical laboratory that is certified under the Clinical Laboratory Improvement Amendments of 1988, or CLIA, and licensed by the California Department of Public Health, and accredited by the College of American Pathologists, or CAP, and subsequent commercialization of a laboratory developed test, or LDT.

Our current and planned blood and CSF assays are intended to provide information to aid healthcare providers by identifying tumor cells associated with progression or metastasis, and identifying specific oncogenic alterations that may qualify a subset of cancer patients for targeted therapy. These assays may also be used for monitoring response to treatment or to identify specific resistance mechanisms.

"Liquid biopsies" are intended to supplement or replace the need for additional invasive surgical tissue biopsies or repeated lumbar punctures to find tumor material (intact cells or tumor derived nucleic acid known as ctDNA and ctRNA) in blood or CSF. Our molecular assays are also designed to help find molecular alterations in situations where tumor tissue or CSF cytology samples are insufficient and/or unable to provide the molecular subtype information necessary for clinical decisions.

Our assays have the potential to provide faster, more contemporaneous information regarding therapy response or the characteristics of a patient's disease when compared with surgical tissue biopsies which must be scheduled or radiographic imaging which may take a month or more to illustrate progression.

Our current assays and our planned future assays focus on key solid tumor indications utilizing our Target-Selector™ liquid biopsy technology platform for the biomarker analysis of CTCs and ctDNA from a standard blood or CSF sample. To distinguish these sample types, we often refer to tumor cells in CSF as CSF-TCs rather than CTCs as the blood and CSF compartments are distinct and separated, and we refer to our CSF assay as CNSide™. Our patented Target-Selector™ CTC platform assays are based on an internally developed microfluidics-based cell capture and analysis platform, with enabling features that change how information provided by CTC testing is used by clinicians. Our patented Target-Selector™ molecular technology enables detection of mutations and genome alterations with enhanced sensitivity and specificity, and is applicable to nucleic acid from ctDNA, and could potentially be validated for other sample types such as bone marrow, or tissue (surgical resections and/or biopsies). Our Target-Selector™ CTC and molecular platforms provide both biomarker detection as well as monitoring capabilities and require only a patient blood sample or CSF sample to inform treatment decisions. In January 2019, we began offering research use only, or RUO, liquid biopsy kits containing our patented and proprietary ctDNA Target Selector™ testing for certain specific cancer genes to laboratories and researchers worldwide. In March 2020 we released an update for our RUO EGFR Target Selector™ Kit which expanded the sample types validated to include both blood and formalin-fixed paraffin-embedded, or FFPE. In March 2020 we also released a RUO BRAF Target Selector™ validated for both ctDNA and FFPE.

At our corporate headquarters facility located in San Diego, California, we operate a clinical laboratory that is certified under CLIA, licensed by the California Department of Public Health, and accredited by CAP. At this facility we perform our current assays, and we

continue to perform research and development for our planned future assays. In addition, we currently manufacture our microfluidic channels and various chemistries used in our testing process, however, we have identified and have been working with a manufacturer to outsource certain manufacturing activities in the near term to reduce costs and improve efficiency. The assays we offer and intend to offer are classified as LDTs under CLIA regulations. CLIA certification is required before any clinical laboratory, including ours, may perform testing on human specimens for the purpose of obtaining information for the diagnosis, prevention, or treatment of disease or the assessment of health. In addition, we participate in and have received CAP accreditation, which includes rigorous bi-annual laboratory inspections and requires adherence to specific quality standards.

Our primary sales strategy is to engage medical oncologists and other physicians in the United States at private and group practices, hospitals, laboratories and cancer centers. In addition, we market our clinical trial and research services to pharmaceutical and biopharmaceutical companies and clinical research organizations. We also market and sell molecular assay kits which enable laboratories other than Biocept to perform our testing in house. Sales of these kits began in the first quarter of 2019. Further, sales to laboratory supply distributors of our proprietary blood collection tubes, or BCTs, commenced in June 2018, which allow for the intact transport of liquid biopsy samples for research use only from regions around the world.

Our revenue generating efforts are focused in three areas:

- providing laboratory services to medical oncologists, neuro-oncologists, and other physicians or healthcare providers treating patients with cancer or COVID-19 who use the biomarker information we provide in order to determine the best treatment plan for their patients;
- providing laboratory services using both our CTC and ctDNA and ctRNA assays in order to help pharmaceutical and biopharmaceutical companies run clinical studies establishing the use of novel drug therapies used to treat cancer; and
- licensing and/or selling our proprietary testing and/or technologies, including our BCTs and assay kits, to partners in the United States and abroad.

We plan to grow our business by directly offering our CNSide™ and Target-Selector™ liquid biopsy CTC and molecular assays to medical oncologists, neuro-oncologists, and other physicians or heath care providers who treat patients with cancer. Based on our product development data, as well as discussions with our key collaborators, we believe that our planned future assays, particularly those related to CSF, should provide important information and clinical value to physicians.

Following the full commercial launch of our CSF assay, CNSide™, we submitted an initial application for Breakthrough Device Designation to the U.S. Food and Drug Administration (“FDA”). While the initial submission was recently denied, we continue to pursue Breakthrough Device Designation for CNSide™ and are gathering data based on the feedback provided by the FDA to further support the submission. The test is currently marketed as a Lab Developed Test in the Company’s CLIA certified and CAP accredited lab. CNSide™ is designed to improve the clinical management of patients with suspected metastatic cancer involving the central nervous system.

Using our Target-Selector assays, cells in CSF or blood can be further interrogated to find various molecular alterations or “biomarkers” that can deliver important, actionable information not provided by other assays. For example, the historic diagnostic CTC test is the FDA approved CellSearch® test, which provides CTC enumeration in blood, but it is not FDA approved for use in CSF or to perform biomarker analysis in blood or CSF. We believe our ability to rapidly translate insights about the utility of cytogenetic, immunocytochemical and molecular biomarkers to provide information to medical oncologists, neuro-oncologists, and other physicians for treatment decisions in the clinical setting will improve patient treatment and management, and that these assays will become a key component of the standard of care for personalized cancer treatment.

Assays, Products and Services

We currently offer and conduct our commercialized diagnostic assays and offer our clinical trial services at our CLIA-certified, CAP-accredited and state-licensed laboratory. We have commercialized our Target-Selector™ assays for a number of solid tumor indications such as: breast cancer, NSCLC, gastric cancer, colorectal cancer, prostate cancer, pancreaticobiliary cancer, and ovarian cancer. These assays utilize our dual CTC and ctDNA technology platforms and provide biomarker analysis from a patient’s blood sample. In addition, to assist with the United States’ urgent need for widespread COVID-19 testing, we launched our RT-PCR COVID-19 testing at our laboratory during the second quarter of 2020.

Our current assays and clinical trial services include:

- *CTC and ctDNA and ctRNA Testing*. Our current assays and our other planned cancer diagnostic assays are based on our Target-Selector™ technologies. After completing testing, we or our partners provide our customers with an easy to understand report that describes the results of the analyses performed, which is designed to help medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians make better decisions about the treatment of their patients.

- *Clinical Trial Services.* We plan to utilize our clinical laboratory and translational research capabilities to provide clinical trial and research services to pharmaceutical and biopharmaceutical companies and clinical research organizations to improve the efficiency and economic viability of their clinical studies. Our clinical studies and translational research services could leverage our knowledge of CTCs and ctDNA and ctRNA and our ability to develop and implement new cytogenetic, immunocytochemical and molecular diagnostic assays. Our current assays can, and our other planned cancer diagnostic assays and biomarker assays are anticipated to be able to, help optimize clinical trial patient selection and/or monitor cancer drivers during the course of treatment or disease progression. Demonstration of clinical utility of our assays would more easily enable these tests to be adopted in standard clinical practice, helping physicians select the most appropriate therapy for their patients.
- *RT-PCR COVID-19 Testing*. We are currently performing RT-PCR testing for COVID-19 and have received approximately 471,000 samples for processing to date. We believe that our RT-PCR COVID-19 testing will be an important aspect of our business until the COVID-19 pandemic subsides.

In the case of our breast and gastric cancer offerings, biomarker analysis involves fluorescence *in situ* hybridization, or FISH, for the detection and quantitation of the human epidermal growth factor receptor 2, or *HER2*, gene copy number as well as immunocytochemical, or ICC, analysis of estrogen receptor, or ER, protein, progesterone receptor, or PR, protein, in breast cancer and androgen receptor, or AR, protein in prostate cancer; all of these tests are currently available commercially. We have also validated and offer a Next Generation sequencing assay for use in breast cancer. A patient's *HER2* status provides the physician with information about the appropriateness of therapies such as Herceptin® or Tykerb®. ER and PR status provides the physician with information about the appropriateness of endocrine therapies such as tamoxifen and aromatase inhibitors.

Our lung cancer biomarker analysis offering currently includes FISH testing for *ALK*, *ROS1*, *RET*, *MET* and *FGFR1* gene rearrangements, as well as analysis for the T790M, Deletion 19, and L858R mutations of the epidermal growth factor receptor, or *EGFR* gene, as well as *BRAF and KRAS*. The L858R mutation of the *EGFR* gene and Exon 19 deletions as activators of *EGFR* kinase activity. For lung cancer, we also offer a resistance profile assay consisting of the biomarkers *MET, HER2* (both of which we perform using our technology for CTCs), *KRAS*, and T790M (both of which are performed using ctDNA in plasma). These assays can be used by physicians to identify the mechanism causing disease progression for patients with NSCLC who are being treated with tyrosine kinase inhibitor, or TKI, therapy and therefore may qualify patients for inclusion in a clinical trial. We have also validated and offer a Next Generation sequencing assay for use in NSCLC.

Fibroblast growth receptor 1, or *FGFR1*, amplification is offered using our CTC technology. *FGFR1* is present in several tumor types, including both NSCLC and small cell lung cancer, or SCLC, and has been shown to be a prognostic indicator of progression. *FGFR1* is also a key target for several drugs undergoing clinical development.

We analytically validated PD-L1 testing utilizing our CTC technology in 2016. PD-L1 is a biomarker that is informative for immuno-oncology therapies currently marketed for lung cancer and melanoma, as well as therapies in development for other tumor types. We collaborated with David Rimm, M.D., Ph.D., a pathologist at Yale Medical School and a scientific advisor to us, on the analytical development of this assay.

We plan to release additional blood-based biomarker assays, such as those that test for *ESR1*, to our current menu of liquid biopsy assays using blood samples. In addition, we plan to complete the development and offer multiplexed biomarker tests, which will allow the detection and quantitative monitoring of multiple biomarkers in a single assay.

In August 2017, we announced that we had executed a distribution agreement for our proprietary blood collection tubes with VWR International, LLC which can preserve intact cells (such as CTCs) for up to 96 hours and ctDNA for up to 8 days, allowing for the intact transport of RUO liquid biopsy samples from regions around the world.

We intend to continue to commercialize cancer diagnostic assays in the United States as LDTs performed in our CLIA-certified, CAP-accredited, and state-licensed laboratory. We plan to evaluate potential opportunities for the commercialization of our products in other countries. We believe the Target-Selector™ technology can be used for molecular biomarker screening, marked as RUO test kits.

We launched the first of our RUO Target Selector kit products, ctDNA *EGFR*, in January 2019. Additionally, we plan to evaluate opportunities for licensing of our products and proprietary technologies to partners in the United States and abroad.

In December 2018, we entered into a Software License and Laboratory Data Supply Agreement with Prognos, Inc., an innovator in predicting disease by applying artificial intelligence, or AI, to clinical laboratory diagnostics. Under the agreement, we will supply de-identified data from its liquid biopsy testing to Prognos, which will leverage its AI capabilities to help its pharmaceutical clients ensure that the right patients receive the right therapies. This agreement could provide revenue sharing opportunities in future periods.

In May 2019, we announced the launch of the Oncomine NGS lung cancer panel in collaboration with Thermo Fisher Scientific. We are working to gain payment for our assay with Palmetto MolDx, who is contracted by CMS to vet new technologies and assays. This means that they must determine that our test is reasonable and necessary for the care of patients diagnosed with late stage Non-Small Cell Lung Cancer. This is the first step in gaining reimbursement for a proprietary test, and we are in the process of negotiating coding and pricing. Once that is finalized, Noridian (the Medicare carrier for our region) must review and accept the recommendation for payment from Palmetto. If they agree with the recommendation from Palmetto MolDx, then Noridian will adopt the payment and reimbursement recommendation or develop their own, and we can then receive payment from Medicare for our lung cancer panel.

In June 2019, we announced launch of the Oncomine NGS breast cancer panel, a multi-gene liquid biopsy panel specifically developed for breast cancer, in collaboration with Thermo Fisher Scientific. This panel is being marketed to physicians and cancer researchers for the detection and monitoring of actionable genomic biomarkers associated with breast cancer.

In November 2019, we announced launch of our liquid biopsy test to detect TRK biomarkers in the blood of patients diagnosed with cancer. Identification of TRK protein enables physicians to rapidly and cost-effectively identify the potential presence of NTRK fusions used to inform on treatment options.

In April 2020, we announced the availability of RUO kits that can allow molecular laboratories around the world to utilize Biocept's Target-Selector™ molecular assay kits to detect key oncogene mutations through the analysis of both Formalin-Fixed Paraffin-Embedded (FFPE) tissue gained from surgical biopsies as well as circulating tumor DNA (ctDNA) gained from blood-based liquid biopsies. In addition, we announced the award of CE (Conformité Européene)-IVD Mark for our Target-Selector™ molecular assay EGFR kit.

In May 2020, we announced the availability of a Target-Selector™ molecular assay RUO kit for the detection of BRAF mutations in ctDNA and FFPE samples.

We launched our RT-PCR COVID-19 testing business during the second quarter of 2020. We have received approximately 471,000 samples for processing through our RT-PCR technology at our laboratory through the date of filing and we believe that performing highly accurate RT-PCR testing for COVID-19 will be an important aspect of our business until the COVID-19 pandemic subsides.

We also expanded our prostate panel offerings as a key element for growing the demand for our testing among urologists, including the AR-V7 assay which helps physicians determine if a patient should stay on hormone therapy or switch to chemotherapy, as well as *PTEN*, *MET*, *MYC*, and *EGFR* FISH assays which provide valuable prognostic information as to the aggressiveness of a patient's prostate cancer.

In April 2021, we announced full commercial launch of our CNSide™ cerebrospinal fluid assay to address unmet needs of patients with metastatic brain cancer. The CNSide™ cerebrospinal fluid assay is designed to better detect and manage treatment of metastatic cancers involving the central nervous system (CNS).

In June 2021, we announced a collaboration with Quest Diagnostics to provide laboratory testing services to Quest patients using our Target Selector™ NGS-based liquid biopsy targeted lung cancer panel. Quest Diagnostics is the leading provider of diagnostic information services, including advanced diagnostics.

In July 2021, we received a positive final Local Coverage Determination (LCD) that expands Medicare coverage for use of our Target Selector™ assay to identify the HER2 biomarker from circulating tumor cells (CTCs). This coverage determination from the Centers for Medicare & Medicaid Services (CMS) Molecular Diagnostics Program (MolDx) was effective July 4, 2021.

Pharmaceutical, Research and Health Economic Collaborations

We continue to execute on our strategies intended to expand our business globally, as well as to engage with pharmaceutical companies on clinical trials and assay development. We have preferred provider agreements in place in Mexico with Quest Diagnostics to support testing for Astra Zeneca. In addition, we have distribution agreements in place in Mexico.

As a follow up to the CTC findings published in *Cancer Medicine*, we were involved in a clinical study led by investigators at the Dana-Farber Cancer Institute. Study enrollment was completed. During the screening phase of this study, our CLIA-certified, CAP accredited laboratory tested blood samples from a cohort of patients with *HER2* negative tissue status, with the aim to identify individuals with *HER2* amplified CTCs. These patients were then assigned to chemotherapy plus Herceptin®. Additional CTC testing

with *HER2* FISH biomarker analyses were performed at subsequent time points. At the December 2014 San Antonio Breast Cancer Symposium, we presented findings of 311 patients tested with *HER2* negative tissue status, where 22% had CTCs with *HER2* gene amplification at disease progression. *HER2* gene amplification subsequently categorized these patients as potential candidates for anti-*HER2* therapy as the cancer evolved. Moreover, our multi-antibody CTC capture method identified a substantial subset of patients who would not likely have had detectable CTCs with commonly used CTC capture technologies. This added 10% (included in the 22%) to the number of women who were candidates for this highly specific targeted therapy.

With our cooperation, researchers at Columbia University published a study in the journal *Clinical and Translational Oncology* in January 2015. The study demonstrated the high correlation (79%) of circulating tumor cells, primary tumor tissue biopsy and metastatic tumor tissue biopsy in the determination of hormone receptor status, or ER/PR, of breast cancer patients. The investigators also found that this high correlation was strongest when comparing metastatic tissue biopsy to CTCs (83%). The conclusion of the study was that determining ER/PR status in CTCs using our platform is feasible, with high concordance in ER/PR between tumor tissue (as determined with immunohistochemistry, or IHC) and CTCs (as determined with immunocytochemistry, or ICC). The authors suggest a larger trial to determine the prognostic significance of these findings.

In September 2015, we presented the clinical validation data of our ctDNA assay in collaboration with the University of California, San Diego. The results demonstrated a very high level of concordance to tissue results (88%), together with >95% analytical sensitivity and 99% analytical specificity, supporting our offering of a validated, robust non-invasive solution for mutation identification and monitoring in patients with lung cancer. Subsequent FDA approval of Tagrisso®, a third-generation tyrosine kinase inhibitor, presented an opportunity for patients to be monitored using a ctDNA and ctRNA assay.

During 2016, we announced a pharmaceutical collaboration agreement that provides testing for a clinical trial, which includes metastatic lung cancer patients with leptomeningeal or brain metastases. In this exploratory trial, we tested both cerebrospinal fluid and blood for molecular alterations that could be impacted by treatment. A second pharmaceutical collaboration was announced in 2016, which entails a milestone-based assay development project focused on hepatocellular carcinoma, or HCC, or liver cancer. Custom assays utilizing both our CTC and ctDNA and ctRNA technologies were developed for identifying specified biomarkers and capturing HCC CTCs for potential clinical trial use.

In April 2016, we announced a study collaboration with Dr. Giuseppe Giaccone at the MedStar Georgetown University Hospital to assess resistance biomarkers in non-small cell lung cancer, or NSCLC, patients treated with *EGFR* inhibitors or chemotherapy. Later in 2016, we announced another collaboration involving a study presented at the European Society for Medical Oncology, or ESMO, Annual Congress in October 2016, evaluating the detection of EGFR alterations (del19, L858R and T790M) by our Target-Selector™ liquid biopsy. Subsequent to this study, we have earned business in both Mexico and Columbia for EGFR gene mutation testing in blood to qualify patients for a pharmaceutical company's targeted therapy. The relationship also resulted in a study initiated during the following year that includes peripheral blood CTC assessment of PD-L1 protein expression in patients undergoing chemotherapy as a monotherapy or in combination with a checkpoint inhibitor.

In December 2016, we announced a clinical study agreement with Columbia University Medical Center to evaluate the clinical utility of our Target-Selector™ platform to diagnose leptomeningeal metastases, or LM, in breast cancer patients. This work was expanded in the fourth quarter of 2018 to include patients with other primary solid tumor types. Dr. Kevin Kalinsky leads this study to test CTCs in cerebrospinal fluid and blood, where CTC analysis will be compared to standard methods for confirming LM diagnosis. In September 2020, Dr. Kalinsky moved to Emory University in Atlanta, but his work with Columbia University on this project continues.

In May 2017, we entered into a clinical study agreement with the University of Texas Southwestern Medical Center. Led by recognized oncologist and ALK alteration researcher, Dr. Saad Khan, the study is designed to evaluate the clinical utility of our Target-Selector™ platform for patients diagnosed with ALK-positive NSCLC and treated with ALK-inhibitor therapy. A second arm of the study evaluated patients with rare cancers such as anaplastic thyroid cancer to determine if genetic drivers such as *ALK* gene rearrangements can be identified and treated with targeted therapy to improve patient outcomes.

In November 2017, we announced a collaboration involving 100 patients in a clinical study with the University of California, San Diego. The study entails clinical validation of specified PD-L1 antibody clones on our Target-Selector™ CTC platform. Concordance of PD-L1 protein expression in tissue biopsy versus liquid biopsy, as well as correlation of therapeutic response with PD-L1 liquid biopsy status, are the study objectives.

Two complementary posters on the highly sensitive Target Selector ctDNA assays were presented in 2018. The first poster entitled "Biocept Study Shows Incorporation of Thermo Fisher QuantStudio 5 PCR Instrument into Target Selector Platform Improves Sensitivity and Specificity in Detection of Lung Cancer Biomarkers" was presented in January 2018 at the Fifth AACR-IASLC International Joint Conference: Lung Cancer Translational Science from the Bench to the Clinic. The related poster, entitled "Validation of highly sensitive TargetSelector™ ctDNA assays for *EGFR*, *BRAF*, and *KRAS* mutations" was presented at the April 2018 American Association for Cancer Research annual meeting. Together, these posters highlight improvements to the Target

Selector ctDNA platform, enabling more sensitive mutation detection down to a single copy, thereby increasing the likelihood of identifying actionable molecular drivers towards guiding targeted therapy decisions and better management of a patient's cancer.

In collaboration with Dr. Shilpa Gupta from the Masonic Cancer Center at the University of Minnesota, a poster was presented at the April 2018 American Association for Cancer Research annual meeting. The results demonstrated proof-of-concept use of our Target-Selector™ CTC platform, correlating CTC count with clinical responses in refractory testicular cancer patients undergoing therapy. This work is part of a Phase 2 clinical trial of brentuximab vedontin (an anti-CD-30 antibody) with bevacizumab in refractory CD-30 + germ cell tumors. The capability for our Target-Selector™ CTC platform to monitor this rare cancer type presents the potential for a precision medicine-based approach to guide treatment decisions for these patients.

During the first half of 2018, three key case studies were published in peer-reviewed journals. In April, the 2018 Spring issue of *Oncology & Hematology Review* featured a case report demonstrating the clinical utility of our CTC platform whereby identification of an *ALK* rearrangement enabled sequential targeted therapy and improved quality of life in a patient with NSCLC. This case illustrated the use of our technology to monitor therapeutic response and early detection of drug resistance to manage patient disease through the course of treatment with various ALK inhibitors. A Letter to the Editor in the May 2018 issue of *Journal of Thoracic Oncology* described the identification of a *ROS1* rearrangement by Biocept CTC analysis using FISH (fluorescent in situ hybridization). The *ROS1* translocation was concordant with tissue biopsy. In contrast, next-generation sequencing analysis of plasma by another vendor failed to detect the genetic alteration in the patient with lung cancer. Also, in May 2018, a case report describing the application of our CTC technology in the management of metastatic breast cancer was published in *Clinics in Oncology.* This work described a patient with recurrent breast cancer where numerous tissue-based evaluations of the individual's bone-only metastases had repeated challenges or inclusive results. *HER2* amplification detected in CTCs from blood provided crucial information towards changing treatment strategies to include anti-HER therapy, consequently extending and improving the patient's quality of life. Each of the three published cases provide real-life examples in lung and breast cancer towards establishing the importance of liquid biopsy to identify and monitor clinically actionable biomarkers to improve outcomes of patients with cancer.

In July 2018, we announced a collaboration involving two studies with the University of California, San Diego. Each of the two studies will enroll 100 patients with solid tumors, for a total of 200 patients. One study will assess the feasibility of using our CTC and ctDNA methodologies to predict post-resection disease recurrence in patients with Stage II or III cancer, and the other study will use our technology to predict response to therapy in patients with metastatic disease. Dr. Rebecca Shatsky and Dr. Razelle Kurzrock are the investigators key to both studies.

In August 2018, we announced a Quality Improvement Initiative with Highmark Health to help improve molecular testing rates of NCCN Category I Guidelines for NSCLC. The Initiative aims to improve health outcomes by using liquid biopsy to more rapidly assess a patient's actionable biomarker status towards selecting appropriate therapy, while reducing the overall cost of care. The project will evaluate at least 100 patients in the Highmark Health-affiliated Allegheny Health Network, or AHN, Cancer Institute. Patients will receive our CTC and ctDNA testing in addition to tissue biopsy with the goal of obtaining biomarker status results for a higher percentage of patients compared to standard testing.

Two scientific posters featuring the Target Selector™ CTC and ctDNA platforms were presented in September 2018 at the International Association for the Study of Lung Cancer, or IASLC, 19th World Conference on Lung Cancer. Data from these clinical studies demonstrate the ability of our technology to detect and monitor CTC counts and actionable biomarkers in both blood and cerebrospinal fluid, or CSF, of patients with advanced NSCLC. The first poster described interim results of a collaboration with Dr. Janakiraman Subramanian at the Saint Luke's Cancer Institute in Kansas City, Missouri. This study evaluates CTC enumeration in advanced stage NSCLC patients before and during the course of chemotherapy. Interim data suggest that CTC counts may have prognostic and predictive potential to assess therapeutic benefit. The second poster was in collaboration with Kadmon Corporation, featuring CTC and ctDNA analyses and monitoring in the CSF of NSCLC patients with LM who were treated with tesevatib in Kadmon's clinical trial KD019-206. In this study, alterations detected in the CSF of patients were concordant with original tissue biopsies, and serial monitoring of CTCs and ctDNA biomarkers in CSF were consistent with the overall clinical.

A case series was published in the January 2019 issue of the peer reviewed journal, *Clinics in Oncology*. The work highlights the clinical utility of liquid biopsy to stratify patients who may benefit from targeted therapy, describing three patients with metastatic NSCLC for whom tissue biopsy was insufficient for molecular profiling. In all three cases, our ctDNA liquid biopsy analyses detected an activating *EGFR* mutation. EGFR tyrosine kinase inhibitor therapy subsequently was initiated. Complete response lasting approximately two years was observed in one patient. For two patients, our ctDNA testing was performed at signs of clinical progression and Osimertinib was administered upon our liquid biopsy identification of the *EGFR* T790M resistance marker. In sum, patient survival was dramatically extended in all cases presented where targeted therapies were prescribed based on liquid biopsy results.

In April 2019, we presented a poster at the annual meeting of the American Association for Cancer Research. The work describes analytical validation of Target Selector *ESR1* Next Generation Sequencing, or NGS, ctDNA assays with single copy mutant detection. The assays have a limit of detection, or LOD, 0.03% or better, with >99% sensitivity for mutant allele fractions, or MAF, ranging

from greater than 5% down to 0.03%. *ESR1* gene mutations are associated with acquired drug resistance in up to 55% of patients with estrogen receptor, or ER, positive metastatic breast cancer, or mBC, who received anti-estrogen treatment. Detection of *ESR1* mutations may enable the prediction of treatment failure and disease progression in these patients. As new therapies are developed that antagonize ER activity by mechanisms that differ from current drug treatments, *ESR1* mutation testing can be a helpful tool to identify patients who may benefit from these alternative agents.

In October 2019, we announced the publication of a peer-reviewed journal article featuring the analytical validation results demonstrating the high sensitivity of our Target Selector™ testing for EGFR, BRAF, and KRAS mutation in plasma circulating tumor DNA (ctDNA). The article was published in the journal, *PLOS ONE*, *Volume 14*, *October 2019*, and will also be included as part of a special collection of topical articles, entitled *Targeted Anticancer Therapies and Precision Medicine In Cancer*.

In November 2019, we presented clinical data highlighting performance of our Target Selector™ tests and kits for detecting actionable oncology biomarkers at the 2019 Association for Molecular Pathology, or AMP, Annual Meeting held at the Baltimore Convention Center, in Baltimore, MD. The content of our posters will be published in *The Journal of Molecular Diagnostics*.

In December 2019, we presented clinical data supporting the use of our Target Selector ™ CTC platform as an aid in the monitoring and treatment of breast cancer in a poster session at the 2019 San Antonio Breast Cancer Symposium, or SABS. The data demonstrated the Target Selector™ platform's ability to accurately detect, enumerate, and interrogate CTCs in a cohort of over 1,500 patients, representing various clinical and treatment stages of breast cancer.

In March 2020, we announced publication of clinical data in the peer-reviewed Journal of Clinical Pathology that further validates the Company's Target Selector™ qPCR Assay using "Switch Blocker" technology to identify cancer-related mutations in liquid biopsy samples. The study examined 127 clinical assays for mutations commonly associated with cancer found in the EGFR, BRAF and KRAS genes. Each Target Selector™ assay in the study demonstrated extremely high accuracy, sensitivity and specificity when compared to results obtained from tissue samples, showing a 93%-96% concordance to blinded tissue samples across all assays.

In October 2020, we announced results from a prospective study comparing our Target Selector™ CSF testing to conventional cytology in patients with non-small cell lung cancer, or NSCLS, and LM showing that our Target Selector™ CSF testing may provide a more robust method for detecting lung cancer metastasis in CSF than the current standard of cytology analysis.

In November 2020, we announced results of a study analyzing CSF samples in patients with primary lung or breast cancer with either brain or LM disease. The findings indicate that Target Selector™ CSF assays are a viable and sensitive platform for CTC detection and molecular analysis compared to the current standard of care, CSF cytology, which is typically used to establish or confirm LM disease when cytology imaging findings are suspicious or equivocal.

In December 2020, we announced results from a prospective study showing Target Selector™ was highly accurate in monitoring HER2 alterations in patients with metastatic breast cancer. The results were featured in a poster presentation at the virtual 2020 San Antonio Breast Cancer Symposium.

In February 2021, we presented data at the Molecular Med Tri-Con Virtual Conference, showing that our Target Selector™ molecular assay kit detects mutations in up to 50% of tissue biopsy specimens, from patients diagnosed with non-small cell lung cancer, that were deemed quantity not sufficient (QNS) by conventional methods.

In February 2021, we announced establishing a research collaboration with Protean BioDiagnostics, Inc. to research the ability of our Target Selector™ molecular assay to determine EGFR status in non-small lung cancer (NSCLC) patients.

Provider Agreements

In January 2017, we announced that we had secured an in-network provider agreement with Blue Cross Blue Shield of Texas, the largest provider of health benefits in Texas. In addition, we entered into a national master business agreement with the Blue Cross Blue Shield Association, a not-for-profit trade association that provides multiple services for its 38-member Blue Cross and Blue Shield health plan companies across the U.S., including forming national strategic vendor partnerships. We were selected by the Blue Cross Blue Shield Association based on a rigorous request-for-proposal progress. This agreement establishes pricing for our Target-Selector™ liquid biopsy testing service through the Blue Cross Blue Shield Association's group purchasing organization, CareSourcing Workgroup. The pricing offered by the CareSourcing Workgroup group purchasing organization is available to those Blue Cross and Blue Shield member health plans that have, or may seek, in-network agreements with us.

In June 2017, we entered into a participating provider agreement with MediNcrease Health Plans, LLC and a preferred provider agreement with Scripps Health Plan Services, Inc., both establishing pricing for our Target-Selector™ liquid biopsy testing service.

In December 2017, we signed an agreement with Wellmark, Inc., the largest health insurer in Iowa and South Dakota. The agreement marks our third Blue Cross Blue Shield contract and enables patients diagnosed with cancer the ability to access our proprietary testing services in-network under their Wellmark health plan.

In August 2018, we entered into a quality initiative program with Highmark and Alleghany Health Network as a result of the Caresourcing Workgroup. The focus is to improve access to molecular testing to members with a diagnosis of lung cancer. Enrollment began in August 2018 and has been steadily increasing.

In July 2019, we announced that we entered into a Laboratory Services Provider Agreement with Beacon Laboratory Benefit Solutions, Inc., a nationally recognized premier provider of laboratory benefit management technology solutions to health and managed care companies in the United States.

In February 2020, we announced that we entered into an agreement with a California-based independent physician association, or IPA, to provide our liquid biopsy testing services to physicians and patients in their network. Our Target Selector™ offering includes the choice of individual biomarker tests or a larger liquid biopsy panel, enabling physicians to select the best approach for each patient.

In June 2020, we announced that we entered into a managed care provider agreement with Medical Cost Containment Professional LLC (MCCP), to process out-of-network claims for Biocept's Target Selector™ liquid biopsy testing. MCCP is a reference-based pricing insurance network that includes more than 150,000 providers nationwide.

In August 2020, we announced the expansion of our agreement with MultiPlan, Inc. to include COVID-19 testing services at a pre-negotiated price per test. MultiPlan is a healthcare cost management company offering payment integrity, network-based and analytics-based services. With the expanded agreement, our RT-PCR COVID-19 testing, in addition to our liquid biopsy oncology testing services, are now accessible to consumers who have access to the PHCS and MultiPlan Networks, MultiPlan's national primary and complementary networks. More than 1 million healthcare providers participate in MultiPlan's networks and 60 million health plan members have access to the company's services.

In addition, in August 2020, we entered into an agreement with a healthcare group to provide RT-PCR COVID-19 testing to skilled nursing facilities. The group operates and supports more than 50 facilities in multiple states, with most located in California, the state with one of the most stringent COVID-19 testing regulations in the United States.

In September 2020, we announced that Highmark, America's fourth largest Blue Cross Blue Shield affiliate, has made a positive coverage determination that our Target Selector™ liquid biopsy assay has been accepted for medical coverage for use in the diagnosis and treatment of patients with NSCLC. In addition, we announced that we entered into an agreement with Health Net Federal Services LLC to be an in-network provider for Target Selector™ liquid biopsy oncology platform testing for cancer patients in the TRICARE West (TriWest) region network. TriWest provides healthcare services to approximately three million members of the U.S. military and their families.

In December 2020, we announced entering into laboratory services agreements with two Southern California regional independent physician associations (IPAs) providing physicians and patients in-network access to our full array of Target Selector™ liquid biopsy assays and services. Both IPAs are headquartered in San Diego and combined they serve more than 70,000 covered lives in the Southern California region.

We are currently contracted with nine preferred provider organization networks, three large health plans, and five regional independent physician associations, and expect to continue to gain contracts in order to be considered as an "in-network" provider with additional plans.

Patents and Technology

The proprietary nature of, and protection for, our products, services, processes, and know-how are important to our business. Our success depends in part on our ability to protect the proprietary nature of our products, services, technology, and know-how, to operate without infringing on the proprietary rights of others, and to prevent others from infringing our proprietary rights. We seek patent protection in the United States and internationally for our products, services and other technology. Our policy is to patent or in-license the technology, inventions and improvements that we consider important to the development of our business.

We also rely on trade secrets, know-how, and continuing innovation to develop and maintain our competitive position. We cannot be certain that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents granted to us in the future will be commercially useful in protecting our technology.

Our success depends on an intellectual property portfolio that supports our future revenue streams and erects barriers to our competitors. We are maintaining and building our patent portfolio through filing new patent applications, prosecuting existing applications, and licensing and acquiring new patents and patent applications.

We have issued patents with broad claims covering our blood collection tube, antibody cocktail approach, microchannel, CTC detection methodologies, and ctDNA analysis. In addition to issued patents in the U.S., we have patents for our proprietary microchannel in China, South Korea, Europe, Hong Kong, Canada and Japan, and for our antibody cocktail in Australia, Europe, Canada, China, Hong Kong and Japan. Our patent estate continues to evolve, and in addition to the broad patent estate around our CTC platform, we also have issued patents in the U.S., Australia, Brazil, Europe, Hong Kong, Japan, China and South Korea for our novel switch blocker technology, solidifying our proprietary enrichment methodology for detecting ctDNA with very high sensitivity. We also have recently issued patents in the U.S. Australia, Japan, and Korea for a unique primer switch technology which can be used for detecting rare genetic alterations, and for improving the performance of PCR based amplification assays. Our CTC platform patents were filed from 2005 through 2012, and we expect to have patent protection into the 2030s. Our CTC patents and applications cover not only cancer as a target, but also prenatal and other rare cells of interest. Recently granted patents in the U.S. cover the capture of any target of interest on any solid surface using our antibody capture approach. The patent for our proprietary specimen collection tubes expires in 2031, and the patents for our ctDNA technology expire in the early 2030s.

As of June 30, 2021, we owned 53 issued patents and have nine patent applications pending related to our core business. Of these, 13 were issued U.S. patents and three were pending patent applications in the U.S., while 40 were issued patents in non-U.S. territories and six were pending patent applications in non-U.S. territories.

Coronavirus (COVID-19) Pandemic

The COVID-19 pandemic continues to evolve, and the extent to which COVID-19 may impact our business will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the pandemic, the emergence and impact of variants, vaccinations, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions, and the effectiveness of actions taken in the United States and other countries to contain and treat the disease. We estimate that the COVID-19 pandemic led to an approximate 15 to 25% decline in commercial volume from current customers, and also impacted opportunities for us to gain new customers with the closing of many physician offices and labs. We are continuing to vigilantly monitor the situation with our primary focus on the health and safety of our employees and clients.

In April 2020, we announced that we verified a COVID-19 molecular diagnostic test and that we would begin accepting physician-ordered testing requests. The testing volume was initially limited by the national shortage of specimen collection kits. On June 22, 2020, we announced the availability of 10,000 specimen collection kits for COVID-19 testing for physician ordering. Collected specimens are shipped to our high-complexity, CLIA-certified, CAP-accredited and BSL-2 safety level laboratory in San Diego with results returned to ordering physicians in an estimated 24 to 48 hours. We have received approximately 471,000 samples for processing through our RT-PCR technology at our laboratory to date and we believe that performing highly accurate RT-PCR testing for COVID-19 will be an important aspect of our business until the COVID-19 pandemic subsides.

On June 3, 2020, we entered into a development agreement with Aegea focused on the co-development by us and Aegea of a highly sensitive PCR-based assay designed by Aegea for detecting the COVID-19 virus. In February 2021, we entered into a supply agreement with Aegea for a new PCR-based COVID-19 assay kit designed by Aegea and co-developed by Aegea and us. Under the supply agreement, Aegea will supply the COVID-19 assay kit to us for validation in our CLIA-certified, CAP-accredited high-complexity molecular lab and subsequent commercialization of a laboratory developed test (LDT).

In January 2021, we signed an agreement with the Foundation for California Community Colleges to make COVID-19 testing available to the 116 California community colleges and their more than 2.1 million students. Through the Foundation’s CollegeBuys program, our PCR-based COVID-19 test is now available for community colleges to purchase for students, faculty and staff.

In June 2021, we announced a collaboration with CLEARED4, a market leader in pandemic health and safety solutions, to develop a system for tracking and managing COVID-19 testing requirements and test results for our customers.

Results of Operations

Three Months Ended June 30, 2020 and 2021

The following table sets forth certain information concerning our results of operations for the periods shown (dollars in thousands):

	Three months ended June 30,		Change	
	2020	2021	$	%
Net revenues	$ 917	$ 12,047	$ 11,130	1,214%
Cost of revenues	2,517	7,462	4,945	196%
Research and development expenses	1,589	1,138	(451)	(28%)
General and administrative expenses	1,911	3,251	1,340	70%
Sales and marketing expenses	1,333	1,945	612	46%
Loss from operations	(6,433)	(1,749)	4,684	(73%)
Interest expense	(56)	(80)	(24)	43%
Loss before income taxes	(6,489)	(1,829)	4,660	(72%)
Income tax expense	—	—	—	0%
Net loss	$ (6,489)	$ (1,829)	$ 4,660	(72%)

Net Revenues

Net revenues were approximately $12.0 million for the three months ended June 30, 2021, compared with approximately $917,000 for the same period in 2020, an increase of $11.1 million, with the increase attributable to significant RT-PCR COVID-19 testing volumes during the three months ended June 30, 2021.

Revenues for the three months ended June 30, 2021 included $12.0 million in commercial test revenue, which includes $12.1 million attributable to RT-PCR COVID-19 testing, $33,000 in development services test revenue and $33,000 in revenue for distributed products, Target Selector™ RUO kits, CEE-Sure® blood collection tubes and payments from Aegea for services associated with the development of a COVID-19 assay. Commercial revenues for the three months ended June 30, 2021 were reduced by $1.1 million as a result of an increase in reserves for aged accounts receivable balances. Revenues for the three months ended June 30, 2020 included $841,000 in commercial test revenue, $38,000 in development services test revenue and $38,000 from distributed products. The increase in net revenues is due to an increase in overall accession volumes, which is attributable to the COVID-19 testing business, which was launched during the second quarter of 2020, resulting in approximately 104,000 delivered accessions during the three months ended June 30, 2021.

The net estimated revenue per commercial accession delivered during the three months ended June 30, 2021 was $115, based on 104,061 commercial accessions delivered, while during the three months ended June 30, 2020 it was approximately $830, based on 1,013 commercial accessions delivered. The net revenue per commercial accessions delivered decreased primarily due to the high volume of COVID-19 testing which gets reimbursed at a much lower rate than our core commercial testing. The following table sets forth certain information regarding commercial accessions delivered during the three months ended June 30, 2020 and 2021:

	Three months ended June 30,		Change	
	2020	2021	# / $	%
# Commercial accessions delivered	1,013	104,061	103,048	*
$ Value estimated per commercial accession delivered	$ 830	$ 115	$ (715)	(86%)

* Not meaningful due to COVID-19 volume.

Additionally, overall development revenues stayed relatively flat as compared to the same period in the prior year. The net revenue per accession decreased primarily due to the lower average number of biomarkers ordered per test during period as compared to the same period in the prior year as follows:

	Three months ended June 30,		Change	
	2020	2021	# / $	%
# Development services accessions delivered	90	140	50	56%
$ Value per development services accession delivered	$ 427	$ 239	(188)	(44%)

Costs and Expenses

Cost of Revenues. Cost of revenues was approximately $7,462,000 for the three months ended June 30, 2021, compared with approximately $2,517,000 for the same period in 2020, representing an increase of $4,945,000, or 196%, primarily resulting from increased revenues related to our RT-PCR COVID-19 testing business. As we continue to leverage the fixed components of our costs, our cost of revenues as a percentage of net revenues decreased by approximately 213% for the three months ended June 30, 2021 as compared to the same period in the prior year. Cost of revenues are comprised of, but not limited to, expenses related to personnel costs, materials, shipping and other direct costs, as well as equipment depreciation and software amortization expenses.

Research and Development Expenses. Research and development expenses were approximately $1,138,000 for the three months ended June 30, 2021, compared with approximately $1,589,000 for the same period in 2020, representing a decrease of $451,000, or 28%. The decrease was primarily attributable to lower facilities and cost of revenue allocations to research and development during the three months ended June 30, 2021. Research and development expenses are comprised of, but not limited to, personnel costs, material, shipping and other direct costs, computer and laboratory equipment maintenance and facility related costs.

General and Administrative Expenses. General and administrative expenses were approximately $3,251,000 for the three months ended June 30, 2021, compared with approximately $1,911,000 during the same period in 2020, representing an increase of $1,340,000 or 70% as compared to the same period in the prior year. The increase was primarily due to headcount additions and other costs related to COVID-19 testing. General and administrative expenses are comprised of, but not limited to, personnel costs, facilities, depreciation, repairs and maintenance costs, stock-based compensation expenses, patent and legal costs, accounting and audit fees, as well as insurance, office and other expenses.

Sales and Marketing Expenses. Sales and marketing expenses were approximately $1,945,000 for the three months ended June 30, 2021 compared with approximately $1,333,000 for the same period in 2020, an increase of $612,000, or 46%. The increase was primarily attributable to higher sales commissions due to higher revenues during the current period. Sales and marketing expenses are comprised of, but not limited to, personnel costs, which include commissions, trade show and other marketing related expenses, as well as office and other costs.

Interest Expenses. Interest expenses were approximately $80,000 for the three months ended June 30, 2021 compared with approximately $56,000 for the same period in 2020, an increase of $24,000 or 43% reflecting interest recognized on new leases initiated during the year.

Income Tax Expense

Over the past several years we have generated operating losses in all jurisdictions in which we may be subject to income taxes. As a result, we have accumulated significant net operating losses and other deferred tax assets. Because of our history of losses and the uncertainty as to the realization of those deferred tax assets, a full valuation allowance has been recognized. We do not expect to report a provision for income taxes until we have a history of earnings, if ever, that would support the realization of our deferred tax assets.

We have not completed a study to assess whether an ownership change has occurred or whether there have been multiple ownership changes since our formation, due to the complexity and cost associated with such a study, and the fact that there may be additional ownership changes in the future, however, we believe multiple ownership changes likely occurred. As a result, we have estimated that the use of our net operating losses is limited and the remaining net operating loss carryforwards and research and development credits we estimate can be used in the future remain fully offset by a valuation allowance to reduce the net asset to zero.

Results of Operations

Six Months Ended June 30, 2020 and 2021

The following table sets forth certain information concerning our results of operations for the periods shown (dollars in thousands):

	Six months ended June 30,		Change	
	2020	2021	$	%
Net revenues	$ 2,364	$ 29,803	$ 27,439	1,161%
Cost of revenues	5,465	16,468	11,003	201%
Research and development expenses	2,902	2,180	(722)	(25%)
General and administrative expenses	3,816	6,371	2,555	67%
Sales and marketing expenses	2,798	3,868	1,070	38%
Loss/income from operations	(12,617)	916	13,533	(107%)
Interest expense	(113)	(145)	(32)	28%
Warrant inducement expense	(2,102)	—	2,102	(100%)
Loss/income before income taxes	(14,832)	771	15,603	(105%)
Income tax expense	—	—	—	0%
Net loss/income	$ (14,832)	$ 771	$ 15,603	(105%)

Net Revenues

Net revenues were approximately $29.8 million for the six months ended June 30, 2021, compared with approximately $2.4 million for the same period in 2020, an increase of $27.4 million, with the increase attributable to significant RT-PCR COVID-19 testing volumes during the six months ended June 30, 2021.

Revenues for the six months ended June 30, 2021 included $29.6 million in commercial test revenue, which includes $29.0 million attributable to RT-PCR COVID-19 testing, $73,000 in development services test revenue and $95,000 in revenue for distributed products, Target Selector™ RUO kits, CEE-Sure® blood collection tubes and payments from Aegea for services associated with the development of a COVID-19 assay. Commercial revenues for the six months ended June 30, 2021 were reduced by $1.1 million as a result of an increase in reserves for aged accounts receivable balances. Revenues for the six months ended June 30, 2020 included $2.2 million in commercial test revenue, $99,000 in development services test revenue and $107,000 from distributed products. The increase in net revenues is due to an increase in overall accession volumes, which is attributable to the COVID-19 testing business, which was launched during the second quarter of 2020, resulting in approximately 245,000 delivered accessions during the six months ended June 30, 2021.

The net estimated revenue per commercial accession delivered during the six months ended June 30, 2021 was $121, based on 245,401 commercial accessions delivered, while during the six months ended June 30, 2020 it was approximately $1,063, based on 2,031 commercial accessions delivered. The net revenue per commercial accessions delivered decreased primarily due to the high volume of COVID-19 testing which gets reimbursed at a much lower rate than our core commercial testing. The following table sets forth certain information regarding commercial accessions delivered during the six months ended June 30, 2020 and 2021:

	Six months ended June 30,		Change	
	2020	2021	# / $	%
# Commercial accessions delivered	2,031	245,401	243,370	*
$ Value estimated per commercial accession delivered	$ 1,063	$ 121	$ (942)	(89%)

* Not meaningful due to COVID-19 volume.

Additionally, overall development revenues stayed relatively flat as compared to the same period in the prior year. The net revenue per accession decreased primarily due to the lower average number of biomarkers ordered per test during period as compared to the same period in the prior year as follows:

	Six months ended June 30,		Change	
	2020	2021	# / $	%
# Development services cases delivered	240	235	(5)	(2%)
$ Value per development services accession delivered	$ 412	$ 309	$ (103)	(25%)

Costs and Expenses

Cost of Revenues. Cost of revenues was approximately $16,468,000 for the six months ended June 30, 2021 compared to approximately $5,465,000 for the same period in 2020, representing an increase of $11,003,000, or 201% primarily resulting from increased revenues related to our RT-PCR COVID-19 testing business. As we continue to leverage the fixed components of our costs, our cost of revenues as a percentage of net revenues decreased by approximately 175.9% for the six months ended June 30, 2021 as compared to the same period in the prior year. Cost of revenues are comprised of, but not limited to, expenses related to personnel costs, materials, shipping and other direct costs, as well as equipment depreciation and software amortization expenses.

Research and Development Expenses. Research and development expenses were approximately $2,180,000 for the six months ended June 30, 2021, compared with approximately $2,902,000 for the same period in 2020, a decrease of $722,000, or 25%. The decrease was primarily attributable to lower facilities and cost of revenue allocations to research of development during the six months ended June 30, 2021. Research and development expenses are comprised of, but not limited to, personnel costs, material, shipping and other direct costs, computer and laboratory equipment maintenance and facility related costs.

General and Administrative Expenses. General and administrative expenses were approximately $6,371,000 for the six months ended June 30, 2021, compared with approximately $3,816,000 during the same period in 2020, an increase of $2,555,000, or 67%. The increase was primarily due to headcount additions and other costs related to COVID-19 testing. General and administrative expenses are comprised of, but not limited to, personnel costs, facilities, depreciation, repairs and maintenance costs, stock-based compensation expenses, patent and legal costs, accounting and audit fees, as well as insurance, office and other expenses.

Sales and Marketing Expenses. Sales and marketing expenses were approximately $3,868,000 for the six months ended June 30, 2021 compared with approximately $2,798,000 for the same period in 2020, an increase of $1,070,000, or 38%. The increase was primarily attributable to higher sales commissions due to higher revenues during the current period. Sales and marketing expenses are comprised of, but not limited to, personnel costs, which include commissions, trade show and other marketing related expenses, as well as office and other costs.

Interest Expenses. Interest expenses were approximately $145,000 for the six months ended June 30, 2021 compared with approximately $113,000 for the same period in 2020 reflecting interest recognized on new leases initiated during the year.

Warrant Inducement Expense. There was no warrant inducement expense recognized in the six months ended June 30, 2021 compared to approximately $2,102,000 for the same period in 2020. Warrant inducement expense was recognized in the first quarter of 2020 related to the fair value of the inducement warrants issued in January 2020 and warrant modification costs.

Income Tax Expense

Over the past several years we have generated operating losses in all jurisdictions in which we may be subject to income taxes. As a result, we have accumulated significant net operating losses and other deferred tax assets. Because of our history of losses and the uncertainty as to the realization of those deferred tax assets, a full valuation allowance has been recognized. We do not expect to report a provision for income taxes until we have a history of earnings, if ever, that would support the realization of our deferred tax assets.

We have not completed a study to assess whether an ownership change has occurred or whether there have been multiple ownership changes since our formation, due to the complexity and cost associated with such a study, and the fact that there may be additional ownership changes in the future, however, we believe multiple ownership changes likely occurred. As a result, we have estimated that the use of our net operating losses is limited and the remaining net operating loss carryforwards and research and development credits we estimate can be used in the future remain fully offset by a valuation allowance to reduce the net asset to zero.

Liquidity and Capital Resources

Cash Flows

Our net cash flow from operating, investing and financing activities for the periods below were as follows (dollars in thousands):

	Six months ended June 30,	
	2020	2021
Cash provided by/ (used in):		
Operating activities	$ (11,970)	$ 2,811
Investing activities	(35)	(832)
Financing activities	26,758	3,104
Net increase in cash	$ 14,753	$ 5,083

Cash Provided/Used in Operating Activities. Net cash provided by operating activities was $2.8 million for the six months ended June 30, 2021, compared to net cash used in operating activities of $12.0 million for the same period in 2020. The net decrease in cash used was primarily related to revenues generated from our COVID-19 testing business during the first half of 2021.

Cash Used in Investing Activities. Net cash used in investing activities of approximately $832,000 and $35,000 during the six months ended June 30, 2021 and 2020, respectively, was related to purchases of fixed assets.

Cash Provided by Financing Activities. Net cash provided by financing activities was $3.1 million for the six months ended June 30, 2021, compared to net cash provided by financing activities of $26.8 million for the same period in 2020. Our primary sources of cash from financing activities during the six months ended June 30, 2021 consisted of $3.9 million in net proceeds from our sale of common stock from our at-the-market equity facility, partially offset by $624,000 of payments related to finance leases for equipment used in our laboratory operations, and $205,000 of payments related to supplier and other third party financing transactions. Our primary sources of cash from financing activities during the six months ended June 30, 2020 consisted of $660,000 in net proceeds from exercise of overallotment warrants from the December 2019 warrants in January 2020, net proceeds of $24.2 million from our sale of common stock in three financing transactions in March and April 2020, and $2.4 million in proceeds from exercise of common stock warrants. Net proceeds from financing transactions were partially offset by $0.5 million of principal payments made on finance leases and indebtedness.

Liquidity, Capital Resources and Expenditure Requirements

We expect to continue to incur substantial operating losses in the future. We expect that we will use the net proceeds from our sale of equity securities, if any, cash received from the licensing of our technology, if any, and our revenues from operations to hire sales and marketing personnel, support increased sales and marketing activities, fund further research and development, clinical utility studies and future enhancements of our assays, acquire equipment, implement automation and scale our capabilities to prepare for significant assay volume, for general corporate purposes and to fund ongoing operations and the expansion of our business, including the increased costs associated with expanded commercial activities. We may also use the net proceeds from our sale of equity securities, if any, cash received from the licensing of our technology, if any, and our revenues from operations to acquire or invest in businesses, technologies, services or products, although we do not have any current plans to do so.

In January 2020, we completed a Warrant Exercise Inducement offering and received net proceeds of approximately $2.3 million, as well as an additional $700,000 from the underwriter exercising its overallotment warrants from the December 2019 underwritten financing transaction. In addition, as inducement for these exercises, we issued 692,725 warrants to purchase shares of common stock at $3.495 per share. The warrants are exercisable on the six-month anniversary of issuance and expire five years following the date first exercisable. On March 2, 2020, we sold and issued 2,300,000 shares of our common stock at a purchase price of $4.00 per share in a registered direct offering and received net proceeds of approximately $8.6 million, after deducting placement agent fees and other expenses. On March 4, 2020, we sold and issued 1,600,000 shares of our common stock at a purchase price of $4.10 per share in a registered direct offering and received net cash proceeds of approximately $6.1 million after deducting placement agent fees and other expenses. On April 16, 2020, we sold and issued 2,230,000 shares of our common stock at a purchase price of $4.60 per share in a registered direct offering and received net cash proceeds of approximately $9.6 million, after deducting placement agent fees and other expenses. During the three months ended June 30, 2021, we received net cash proceeds of approximately $3.9 million from the sales of 908,044 shares of our common stock at a weighted average sale price of $4.67 per share, using the Company’s at-the-market equity facility initiated in May 2021.

As of June 30, 2021, our cash totaled $19.5 million. The COVID-19 testing revenue during 2020 and through the second quarter of 2021, has provided us with increased levels of cash inflows from operations, and it is expected to continue, albeit at lower and declining levels, throughout at least the next twelve months. As a result, we believe that based on our current and planned cash usage, along with current COVID-19 testing revenues, our cash balances will support our operations through the third quarter of 2022. As

such, we determined that it is not probable based on projected cash flows that substantial doubt about our ability to continue as a going concern exists for the one-year period following the date that the financial statements for the quarter ended June 30, 2021 were issued. The COVID-19 pandemic continues to evolve, and the extent to which COVID-19 may impact the Company's business will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the outbreak, travel restrictions and social distancing in the United States and other countries, business closures or business disruptions, and the effectiveness of actions taken in the United States and other countries to contain and treat the disease. While the Company experienced increased revenue levels in 2020 related to its COVID-19 testing business and attained net income for the first time in its operating history in the fourth quarter in 2020, and then again in the first quarter in 2021, these results are not expected to be indicative of future results as the COVID-19 pandemic subsides.

In May 2020, the SEC declared effective a shelf registration statement filed by us. The shelf registration statement allows us to issue any combination of our common stock, preferred stock, debt securities and warrants from time to time for an aggregate initial offering price of up to $100.0 million.

In May 2021, we entered into a Controlled Equity Offering^{SM} Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co. (the "Sales Agent"), under which we may issue and sell from time to time up to $25,000,000 of our common stock through or to the Sales Agent, as sales agent or principal. Any sale of shares of our common stock under the Sales Agreement will be made under our shelf registration statement on Form S-3, which was declared effective by the SEC in May 2020. Sales of our common stock under the Sales Agreement are made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act of 1933, as amended. Each time we wish to issue and sell common stock under the Sales Agreement, we notify the Sales Agent of the number of shares to be issued, the dates on which such sales are anticipated to be made and any minimum price below which sales may not be made. Once we have so instructed the Sales Agent, unless the Sales Agent declines to accept the terms of the notice, the Sales Agent has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of the Sales Agent under the Sales Agreement to sell our common stock are subject to a number of conditions that we must meet. The Sales Agent is entitled to compensation from us at a fixed commission rate equal to 3.0% of the gross sales price per share of any common stock sold under the Sales Agreement. During the three months ended June 30, 2021, we sold and issued 908,044 shares of our common stock at a weighted average purchase price of $4.67 under the Sales Agreement and received net cash proceeds of approximately $3.9 million after deducting sales agent commissions. As of June 30, 2021, $21.1 million of our common stock remained available for sale under the Sales Agreement.

We expect that we will need additional financing to execute on our current or future business strategies beyond the next twelve months. Until we can generate significant cash from operations, including assay revenues, we expect to continue to fund operations with the proceeds from offerings of our equity securities or debt, or transactions involving product development, technology licensing or collaboration. For example, we have an effective shelf registration statement on file with the SEC which allows us to issue any combination of our common stock, preferred stock, debt securities and warrants from time to time until expiration in May 2023. The specific terms of additional future offerings, if any, under this shelf registration statement would be established at the time of such offerings. We can provide no assurances that any sources of a sufficient amount of financing will be available to us on favorable terms, if at all. If we are unable to raise a sufficient amount of financing in a timely manner, we would likely need to scale back our general and administrative activities and certain of our research and development activities. Our forecast pertaining to our current financial resources and the costs to support our general and administrative and research and development activities are forward-looking statements and involve risks and uncertainties. Actual results could vary materially and negatively as a result of a number of factors, including:

- the impact of the COVID-19 pandemic on our business;
- our ability to secure financing and the amount thereof;
- the costs of operating and enhancing our laboratory facilities;
- the costs of developing our anticipated internal sales and marketing capabilities;
- the scope, progress and results of our research and development programs, including clinical utility studies;
- the scope, progress, results, costs, timing and outcomes of the clinical utility studies for our diagnostic assays;
- our ability to manage the costs for manufacturing our microfluidic channels;
- the costs of maintaining, expanding and protecting our intellectual property portfolio, including potential litigation costs and liabilities;
- our ability to obtain adequate reimbursement from governmental and other third-party payers for our assays and services;
- the costs of additional general and administrative personnel, including accounting and finance, legal and human resources, as a result of becoming a public company;
- our ability to collect revenues; and

- other risks discussed in our other filings with the SEC.

We may raise additional capital to fund our current operations and to fund expansion of our business to meet our long-term business objectives through public or private equity offerings, debt financings, borrowings or strategic partnerships coupled with an investment in our company or a combination thereof. If we raise additional funds through the issuance of convertible debt securities, or other debt securities, these securities could be secured and could have rights senior to those of our common stock. In addition, any new debt incurred by us could impose covenants that restrict our operations. The issuance of any new equity securities will also dilute the interest of our current stockholders. Given the risks associated with our business, including our unprofitable operating history and our ability or inability to develop additional assays, additional capital may not be available when needed on acceptable terms, or at all. If adequate funds are not available, we will need to curb our expansion plans or limit our research and development activities, which would have a material adverse impact on our business prospects and results of operations.

Off-Balance Sheet Arrangements

We have not engaged in any off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K.

Critical Accounting Policies and Significant Judgments and Estimates

For a discussion of accounting policies that we consider critical to our business operations and understanding of our results of operations, and that affect the more significant judgments and estimates used in the preparation of our financial statements, please see the information listed in Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Significant Judgments and Estimates” contained in our Annual Report on Form 10-K for the year ended December 31, 2020. There have been no material changes to our critical accounting policies and estimates from the information provided in our Annual Report on Form 10-K for the year ended December 31, 2020.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Not applicable.

Item 4. Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, control may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

As of June 30, 2021, we carried out an evaluation, under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Based on this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of June 30, 2021.

An evaluation was also performed under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, of any change in our internal control over financial reporting that occurred during our last fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. That evaluation did not identify any changes in our internal control over financial reporting that occurred during the three months ended June 30, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

RISK FACTOR SUMMARY

Below is a summary of the material factors that make an investment in our common stock speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks summarized in this risk factor summary, and other risks that we face, can be found below under the heading "Risk Factors" and should be carefully considered, together with other information in this Quarterly Report on Form 10-Q and our other filings with the Securities and Exchange Commission before making investment decisions regarding our common stock.

- We are an early-stage molecular oncology diagnostics company with a history of net losses; we expect to incur net losses in the future, and we may never achieve sustained profitability.
- We need to raise additional capital to continue as a going concern.
- If we are unable to increase sales of our current products, assays and services or successfully develop and commercialize other products, assays and services, our revenues will be insufficient for us to achieve profitability.
- If we cannot develop products, assays and services to keep pace with rapid advances in technology, medicine and science, our operating results and competitive position could be harmed.
- If our sole laboratory facility becomes damaged or inoperable, or we are required to vacate the facility, our ability to sell and provide our products and diagnostic assays and pursue our research and development efforts may be jeopardized.
- Our business is subject to risks arising from pandemic and epidemic diseases, such as the COVID-19 pandemic.
- We expect to continue to incur significant expenses to develop and market products and diagnostic assays, which could make it difficult for us to achieve and sustain profitability.
- Clinical utility studies are important in demonstrating to both customers and payers an assay's clinical relevance and value. If we are unable to identify collaborators willing to work with us to conduct clinical utility studies, or the results of those studies do not demonstrate that an assay provides clinically meaningful information and value, commercial adoption of such assay may be slow, which would negatively impact our business.
- The loss of key members of our executive management team could adversely affect our business.
- Our failure to continue to attract, hire and retain a sufficient number of qualified sales professionals would hamper our ability to increase demand for our products and diagnostic assays, to expand geographically and to successfully commercialize any other products or assays we may develop.
- We depend on third parties for the supply of blood samples and other biological materials that we use in our research and development efforts. If the costs of such samples and materials increase or our third-party suppliers terminate their relationship with us, our business may be materially harmed.
- We currently rely on third-party suppliers for our BCTs, shipping kits, and critical materials needed to perform our current assays, as well as our planned future products, assays and services, and any problems experienced by them could result in a delay or interruption of their supply to us.
- Our commercial success could be compromised if hospitals or other clients do not pay our invoices or if third-party payers, including managed care organizations and Medicare, do not provide coverage and reimbursement, breach, rescind or modify their contracts or reimbursement policies or delay payments for our current assays and our planned future assays.
- We expect to depend on Medicare and a limited number of private payers for a significant portion of our revenues and if these or other payers stop providing reimbursement or decrease the amount of reimbursement for our current assays and our planned future assays, our revenues could decline.
- Because of certain Medicare billing policies, we may not receive complete reimbursement for assays provided to Medicare patients. Medicare reimbursement revenues are an important component of our business model, and private payers sometimes look to Medicare determinations when making their own payment determinations; therefore, incomplete or inadequate reimbursement from Medicare would negatively affect our business.

- Long payment cycles of Medicare, Medicaid and/or other third-party payers, or other payment delays, could hurt our cash flows and increase our need for working capital.
- If we were required to conduct additional clinical studies or trials before continuing to offer assays that we have developed or may develop as LDTs, those studies or trials could lead to delays or failure to obtain necessary regulatory approval, which could cause significant delays in commercializing any future products and harm our ability to achieve sustained profitability.
- If we are unable to maintain effective proprietary rights for our products or services, we may not be able to compete effectively in our markets.

RISK FACTORS

An investment in shares of our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information contained elsewhere in this report, before deciding whether to purchase, hold or sell shares of our common stock. The occurrence of any of the following risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. You should consider all of the risk factors described when evaluating our business. We have marked with an asterisk (*) those risk factors that reflect changes from the risk factors included in our Annual Report on Form 10-K for the year ended December 31, 2020 filed with the Securities and Exchange Commission on March 31, 2020.

Risks Relating to Our Financial Condition and Capital Requirements

We are an early-stage molecular oncology diagnostics company with a history of net losses; we expect to incur net losses in the future, and we may never achieve sustained profitability.

We have historically incurred substantial net losses, including a net loss of $17.8 million for the year ended December 31, 2020. While for the first time in our operating history we have generated net income in the fourth quarter of 2020 and also had net income in the first quarter of 2021, both from our revenues from COVID-19 testing, it is expected that once the COVID-19 pandemic subsides, that we will continue to incur net losses and negative cash flows from operations for the foreseeable future. At June 30, 2021, our accumulated deficit was approximately $262.8 million. Before 2008, we were pursuing a business plan relating to fetal genetic disorders and other fields, all of which were unrelated to cancer diagnostics. The portion of our accumulated deficit that relates to the period from inception through December 31, 2007 is approximately $66.5 million.

We expect our losses to continue as a result of costs relating to our laboratory operations as well as increased sales and marketing costs and ongoing research and development expenses. These losses have had, and will continue to have, an adverse effect on our working capital, total assets and stockholders' equity. Because of the numerous risks and uncertainties associated with our commercialization efforts, we are unable to predict when we will become profitable, and we may never become profitable. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our inability to achieve and then maintain profitability would negatively affect our business, financial condition, results of operations and cash flows.

We need to raise additional capital to continue as a going concern.

We expect to continue to incur losses for the foreseeable future and will have to raise additional capital to fund our planned operations and to meet our long-term business objectives. However, the COVID-19 testing revenue during 2020 and through the second quarter of 2021, has provided the Company with increased levels of cash inflows from operations, and it is expected to continue, albeit at lower and declining levels, throughout at least the next twelve months. Until we can generate significant cash from operations, including product and assay revenues, we expect to continue to fund our operations with the proceeds from offerings of our equity securities or debt, or transactions involving product development, technology licensing or collaboration. We can provide no assurances that any sources of a sufficient amount of financing will be available to us on favorable terms, if at all. General market conditions resulting from ongoing issues arising from the COVID-19 pandemic, as well as market conditions affecting companies in the life sciences industry in general, may make it difficult for us to obtain financing from the capital markets on attractive terms, or at all. Failure to raise additional capital in sufficient amounts would significantly impact our ability to continue as a going concern. The actual amount of funds that we will need and the timing of any such investment will be determined by many factors, some of which are beyond our control.

Risks Relating to Our Business and Strategy

If we are unable to increase sales of our current products, assays and services or successfully develop and commercialize other products, assays and services, our revenues will be insufficient for us to achieve profitability.

We currently derive substantially all of our revenues from sales of diagnostic assays. We began offering our assays through our Clinical Laboratory Improvement Amendments of 1988, or CLIA, certified, College of American Pathologists, or CAP accredited,

and state-licensed laboratory in 2014. Additionally, the sale of our proprietary blood collection tubes, or BCTs commenced in June 2018, which allow for the intact transport of liquid biopsy samples for research use only, or RUO, from regions around the world. We are in varying stages of research and development for other products and diagnostic assays that we may offer. If we are unable to increase sales of our existing products and diagnostic assays or successfully develop and commercialize other products and diagnostic assays, we will not produce sufficient revenues to become profitable.

If we are unable to execute our sales and marketing strategy for our products and diagnostic assays and are unable to gain acceptance in the market, we may be unable to generate sufficient revenue to sustain our business.

We are an early-stage molecular oncology diagnostics company and have engaged in only limited sales and marketing activities for the diagnostic assays we currently offer through our CLIA-certified, CAP accredited, and state-licensed laboratory. To date, our revenue has been insufficient to fund operations.

Although we believe that our current assays and our planned future assays, our molecular kits as well as our blood and viral collection tube product, represent a promising commercial opportunity, our products or assays may never gain significant acceptance in the marketplace and therefore may never generate substantial revenue or profits for us. We will need to establish a market for our products and diagnostic assays and build that market through physician education, awareness programs and the publication of clinical trial results. Gaining acceptance in medical communities requires, among other things, publications in leading peer-reviewed journals of results from studies using our current products, assays and services and/or our planned future products, assays and services. The process of publication in leading medical journals is subject to a peer review process and peer reviewers may not consider the results of our studies sufficiently novel or worthy of publication. Failure to have our studies published in peer-reviewed journals would limit the adoption of our current products, assays and services and our planned future products, assays and services.

Our ability to successfully market the products and diagnostic assays that we have developed, and may develop in the future, will depend on numerous factors, including:

- conducting clinical utility studies of such assays in collaboration with key thought leaders to demonstrate their use and value in important medical decisions such as treatment selection;
- whether our current or future partners, vigorously support our offerings;
- the success of our sales force;
- whether healthcare providers believe such diagnostic assays provide clinical utility;
- whether the medical community accepts that such diagnostic assays are sufficiently sensitive and specific to be meaningful in-patient care and treatment decisions;
- our ability to continually source raw materials, BCTs, shipping kits and other products that we sell or consume in our manufacturing process that are of sufficient quality and supply;
- our ability to continue to fund planned sales and marketing activities; and
- whether private health insurers, government health programs and other third-party payers will adopt liquid biopsy-based assays in their guidelines, or cover such diagnostic assays and, if so, whether they will adequately reimburse us.

The COVID-19 pandemic may also increase the risk of certain of the events described above and delay our development timelines. Failure to achieve widespread market acceptance of our current products, assays and services, as well as our planned future products, assays and services, would materially harm our business, financial condition and results of operations.

If we cannot develop products, assays and services to keep pace with rapid advances in technology, medicine and science, our operating results and competitive position could be harmed.

In recent years, there have been numerous advances in technologies relating to the diagnosis and treatment of cancer. Several new cancer drugs have been approved, and a number of new drugs in clinical development may increase patient survival time. There have also been advances in methods used to identify patients likely to benefit from these drugs based on analysis of biomarkers. We must continuously develop new products and diagnostic assays and enhance any existing products, assays and services to keep pace with evolving standards of care. Our current products, assays and services and our planned future products, assays and services could become obsolete unless we continually innovate and expand them to demonstrate benefit in the diagnosis, monitoring or prognosis of patients with cancer. New cancer therapies typically have only a few years of clinical data associated with them, which limits our ability to develop products and diagnostic assays based on, for example, biomarker analysis related to the appearance or development of resistance to those therapies. If we cannot adequately demonstrate the applicability of our current products, assays and services and our planned future products, assays and services to new treatments, by incorporating important biomarker analysis, sales of our products, assays and services could decline, which would have a material adverse effect on our business, financial condition and

results of operations. The COVID-19 pandemic may also increase the risk of certain of the events described above and delay our development timelines.

If our current products, assays and services and our planned future products, assays and services do not continue to perform as expected, our operating results, reputation and business will suffer.

Our success depends on the market's confidence that we can continue to provide reliable, high-quality products and assay results. We believe that our customers are likely to be particularly sensitive to product or assay defects and errors. As a result, the failure of our current or planned future products or assays to perform as expected, including with respect to our ability to maintain the sensitivity, specificity, concordance or reproducibility of such assays, would significantly impair our reputation and the public image of our products and cancer assays, and we may be subject to legal claims arising from any defects or errors. This could also impact our ability to get paid or the amount we are paid.

If our sole laboratory facility becomes damaged or inoperable, or we are required to vacate the facility, our ability to sell and provide our products and diagnostic assays and pursue our research and development efforts may be jeopardized.

We currently derive our revenues from our diagnostic assays conducted in our CLIA-certified, CAP accredited, and state-licensed laboratory. We do not have any clinical reference laboratory facilities other than our facility in San Diego, California. We completed the process of moving our operations and equipment to our new laboratory facility in San Diego in December 2020. Our new facilities and equipment could be harmed or rendered inoperable by natural or man-made disasters, including fire, earthquake, flooding and power outages, which may render it difficult or impossible for us to sell our products or perform our diagnostic assays for some period of time. The inability to sell our current or planned future products, or to perform our current assays and our planned future assays, or the backlog of assays that could develop if our facility is inoperable for even a short period of time, may result in the loss of customers or harm to our reputation or relationships with scientific or clinical collaborators, and we may be unable to regain those customers or repair our reputation in the future. Furthermore, our facilities and the equipment we use to perform our research and development work could be costly and time-consuming to repair or replace.

The San Diego area has recently experienced serious fires and power outages and is considered to lie in an area with earthquake risk.

Additionally, a key component of our research and development process involves using biological samples as the basis for our diagnostic assay development. In some cases, these samples are difficult to obtain. If the parts of our current or future laboratory facility where we store these biological samples were damaged or compromised, our ability to pursue our research and development projects, as well as our reputation, could be jeopardized. We carry insurance for damage to our property and the disruption of our business, but this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, if at all.

Further, if our current or future CLIA-certified, CAP accredited, and state-licensed laboratory becomes inoperable or unqualified in any way we may not be able to license or transfer our technology to another facility with the necessary qualifications, including state licensure and CLIA certification, under the scope of which our current assays and our planned future assays could be performed. Even if we find a facility with such qualifications to perform our assays, it may not be available to us on commercially reasonable terms.

****Our business is subject to risks arising from pandemic and epidemic diseases, such as the COVID-19 pandemic.***

A pandemic, including COVID-19 or other public health epidemic, poses the risk that we or our employees, contractors, suppliers, courier delivery services and other partners may be prevented from conducting business activities for an indefinite period of time, including due to spread of the disease within these groups or due to shutdowns that may be requested or mandated by governmental authorities. The continued spread of COVID-19 and the measures taken by state and local governments could disrupt the supply chain of material needed for our assays, interrupt our ability to receive samples, impair our ability to perform or deliver the results from our tests, impede patient movement or interrupt healthcare services causing a decrease in test volumes, delay coverage decisions from Medicare and third party payers, delay ongoing and planned clinical trials involving our tests and have a material adverse effect on our business, financial condition and results of operations. We estimate that the COVID-19 pandemic led to an approximate 15 to 25% decline in oncology commercial volume from current customers for the year ended December 31, 2020, and also impacted opportunities for us to gain new customers due to the temporary closing of many physician offices and labs. Beginning the week of March 16, 2020, much of our workforce began working from home either all or substantially all of the time, except for staff in our clinical laboratory and manufacturing operations. The ongoing COVID-19 pandemic has resulted in a number of restrictions to reduce the spread of the disease, including executive orders in California, and several other state and local orders across the country, which, among other things, directed individuals to shelter at their places of residence, directed schools, businesses and governmental agencies to cease non-essential operations at physical locations, prohibited certain non-essential gatherings, and ordered cessation of non-essential travel. In some places, these orders have been lifted whereas other locations continue to be subject to restrictions. The emergence of new variants of the SARS-CoV-2 virus raises the possibility that recurring cycles of restrictions will be imposed in the future, notwithstanding vaccination efforts. The effects of state and local stay-at-home orders and our work-from-home policies may

negatively impact productivity, disrupt our business and delay our development programs and regulatory timelines and negatively impact our commercial activities, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. These and similar, and perhaps more severe, disruptions in our operations due to the COVID-19 pandemic could negatively impact our business, operating results and financial condition.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the potential economic impact brought by, and the duration of, the COVID-19 pandemic may be difficult to assess or predict, the pandemic continues to have the potential for disruption of global financial markets. This disruption, if sustained or recurrent, could make it more difficult for us to access capital, which could negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

We are still in the midst of the COVID-19 pandemic. The ultimate impact of the COVID-19 pandemic or a similar health pandemic or epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business, commercialization efforts, healthcare systems or to the global economy as a whole. These effects could have a material impact on our financial condition and operations. We will continue to monitor the COVID-19 situation closely.

The successful development of a vaccine for COVID-19 may harm our RT-PCR COVID-19 testing business.

We launched our RT-PCR COVID-19 testing business during the second quarter of 2020. We have received more than 471,000 samples for processing through our RT-PCR technology at our laboratory to date and we believe that performing highly accurate RT-PCR testing for COVID-19 will be an important aspect of our business until the COVID-19 pandemic subsides. During the year ended December 31, 2020, we saw a significant increase in our net revenues due to our substantial COVID-19 testing volumes during that time. In early 2021, the FDA approved multiple COVID vaccines for administration to the public. The ability to effectively and comprehensively administer COVID-19 vaccines across the United Stated will likely impact revenues generated by our RT-PCR COVID-19 testing business, and we will lose much of the revenue generated related to COVID-19 testing once demand for such testing declines. Our RT-PCR COVID-19 testing is done pursuant to an Emergency Use Authorization which will be revoked when the public health emergency is no longer in effect, and we will no longer be able to offer the test under the EUA after such revocation.

If we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenues or achieve and sustain profitability.

Our principal competition comes from established molecular diagnostic clinical testing services and products, used by medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians, which are based on tumor tissue analysis. It may be difficult to change established clinical practices and behavior of medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians to get them to adopt the use of our blood-based CTC and ctDNA assays, in their practices in conjunction with or instead of molecular diagnostic tests from tissue biopsies.

Blood or liquid biopsy molecular tests based on CTC and ctDNA assays for oncology applications represent a new area of science and medicine and we cannot predict what products or assays others will develop that may compete with or provide results similar or superior to the results we are able to achieve with the products or assays we develop.

We face competition from specialty oncology diagnostic companies that are conducting research and development to develop proprietary CTC or ctDNA based assays and assay test panels for use in genomic profiling and monitoring solid tumor cancers. Competitors developing ctDNA bases assays and assay panels include but are not limited to companies such as Guardant Health, Foundation Medicine, Tempus Laboratories, NeoGenomics, Invitae, Natera, Inivata and Biodesix. EPIC Sciences, Menarini Silicon Biosystems and Angle PLC offer CTC-based assays. These companies, in addition to operating research and development laboratories, have established CLIA-certified testing laboratories and have developed LDT (lab developed tests) that they market directly to oncologists and pathologists. A few of these companies, like Guardant Health, have achieved FDA clearance for their proprietary laboratory tests.

There are a number of national and regional specialty diagnostic companies, such as Caris Life Sciences and CSI, which are focused on the oncology diagnostic market, who while not currently offering CTC or ctDNA assays are selling to oncologists and pathologists and could develop or offer ctDNA or CTC or assays. In addition large laboratory services companies such as Quest and LabCorp which provide a broad array of cancer diagnostic assays and testing services could also offer CTC or ctDNA based clinical testing services. In June 2021, we announced a collaboration with Quest Diagnostics to provide laboratory testing services to Quest patients for our Target Selector NGS-based liquid biopsy targeted lung cancer panel. However, this collaboration does not prevent Quest from offering or providing testing services that are competitive with our panel.

Another new area of science and medicine is CTC and ctDNA assays performed from cerebrospinal fluid (CSF) samples for neuro-oncology applications and there is currently limited competition for our CSF-based CTC and ctDNA assays. There are no known specialty oncology diagnostic companies or large laboratory services companies that offer CSF-based CTC and ctDNA tests for neuro-oncology applications as a standard commercial clinical testing service. A few academic based pathology labs such as Memorial Sloan Kettering Cancer Center offer CSF-based testing mainly for research purposes.

There are a number of companies which are focused on the oncology diagnostic market, who while not currently offering CTC or ctDNA assays are selling to the medical oncologists and pathologists and could develop or offer CTC or ctDNA assays. Large laboratory services companies such as Quest and LabCorp provide more generalized cancer diagnostic assays and testing but could also offer a CTC or ctDNA assay service. Companies like Abbott, Danaher and others could develop equipment or reagents in the future as well. Currently, companies like Streck, Roche and Exact Sciences offer BCTs, and in the future, companies like Covidien, Beckton Dickinson, Thermo Fisher, and other large medical device companies may develop BCTs as well.

There are a number of life science technology companies that are focused on the oncology diagnostic market, such as Thermo Fisher Scientific, Illumina, Abbott Molecular, Bio-Rad, Sysmex, Qiagen, and Roche Diagnostics, that are selling equipment and reagents kits for ctDNA assays and assay panels. These companies compete with our ctDNA assay kit products and blood collection tubes. Menarini Silicon Biosystems sells equipment and reagents kits for CTC assays. These companies market their products to specialty laboratories that offer molecular based testing for oncology applications, including national reference laboratory, regional laboratories and pathology laboratories that are part of academic medical centers and hospital systems. These laboratories may purchase these products and developed ctDNA and CTC based laboratory developed tests that are marketed to medical oncologists and pathologists that compete with our lab services.

Some of our present and potential competitors have widespread brand recognition and substantially greater financial and technical resources and development, production and marketing capabilities than we do. Others may develop lower-priced, less complex assays that payers, medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians could view as functionally equivalent to our current or planned future assays, which could force us to lower the list price of our assays and impact our operating margins and our ability to achieve and maintain profitability. In addition, technological innovations that result in the creation of enhanced products or diagnostic tools that are more sensitive or specific or offer more content than ours may enable other clinical laboratories, hospitals, physicians or medical providers to provide specialized products or diagnostic assays similar to ours in a more patient-friendly, efficient or cost-effective manner than is currently possible. If we cannot compete successfully against current or future competitors, we may be unable to increase or create market acceptance and sales of our current or planned future products or assays, which could prevent us from increasing or sustaining our revenues or achieving or sustaining profitability.

We expect that biopharmaceutical companies will increasingly focus resources on development of targeted oncology therapies that may require a companion diagnostics test approved by the FDA. Biocept may face increasing competition from companies that offer CTC or ctDNA assays or products that are approved by the FDA as an IVD for companion diagnostic uses.

Additionally, projects related to cancer diagnostics and particularly genomics have received increased government funding, both in the United States and internationally. As more information regarding cancer genomics becomes available to the public, we anticipate that more products aimed at identifying targeted treatment options will be developed and that these products may compete with ours. In addition, competitors may develop their own versions of our current or planned future products or assays in countries where we did not apply for patents or where our patents have not issued and compete with us in those countries, including encouraging the use of their product or assay by physicians or patients in other countries.

We expect to continue to incur significant expenses to develop and market products and diagnostic assays, which could make it difficult for us to achieve and sustain profitability.

In recent years, we have incurred significant costs in connection with the development of our products and diagnostic assays. For the year ended December 31, 2020 and the six months ended June 30, 2021, our research and development expenses were $5.2 million and $2.2 million, respectively, and our sales and marketing expenses were $6.4 million and $3.9 million, respectively. We expect our expenses to continue to increase for the foreseeable future as we conduct studies of our current products, assays and services and our planned future products, assays and services, continue to establish our sales and marketing organization, drive adoption of and reimbursement for our products and diagnostic assays and develop new products, assays and services. As a result, we need to generate significant revenues in order to achieve sustained profitability.

If medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians decide not to order our current or planned future assays, or if laboratory supply distributors or their customers decide not to order our current or planned future products, we may be unable to generate sufficient revenue to sustain our business.

To generate demand for our current products, assays and services and our planned future products, assays and services, we will need to educate medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists, and other physicians and other health care professionals, as well as laboratory and medical equipment suppliers, on the clinical utility, benefits and value of the products, assays and services we provide through published papers, presentations at scientific conferences, educational programs and one-on-one education sessions by members of our sales force. In addition, we need to educate medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians of our ability to obtain and maintain coverage and adequate reimbursement from third-party payers. We need to hire additional commercial, scientific, technical and other personnel to support this process. Unless an adequate number of medical practitioners order our current assays and our planned future assays, or unless an adequate number of laboratory supply distributors order our current and planned future products, we will likely be unable to create demand in sufficient volume for us to achieve sustained profitability. Our ability to interface with physicians and other medical professionals has been impacted and will likely continue to be impacted by the ongoing COVID-19 pandemic.

Clinical utility studies are important in demonstrating to both customers and payers an assay's clinical relevance and value. If we are unable to identify collaborators willing to work with us to conduct clinical utility studies, or the results of those studies do not demonstrate that an assay provides clinically meaningful information and value, commercial adoption of such assay may be slow, which would negatively impact our business.

Clinical utility studies show when and how to use a clinical test or assay and describe the particular clinical situations or settings in which it can be applied and the expected results. Clinical utility studies also show the impact of the test or assay results on patient care and management. Clinical utility studies are typically performed with collaborating oncologists or other physicians at medical centers and hospitals, analogous to a clinical trial, and generally result in peer-reviewed publications. Sales and marketing representatives use these publications to demonstrate to customers how to use a clinical test or assay, as well as why they should use it. These publications are also used with payers to obtain coverage for a test or assay, helping to assure there is appropriate reimbursement.

We need to conduct additional studies for our assays, increase assay adoption in the marketplace and obtain coverage and adequate reimbursement. Should we not be able to perform these studies, or should their results not provide clinically meaningful data and value for medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians, adoption of our assays could be impaired, and we may not be able to obtain coverage and adequate reimbursement for them. The COVID-19 pandemic may also increase the risk of certain of the events described above and delay our development timelines.

The loss of key members of our executive management team could adversely affect our business.

Our success in implementing our business strategy depends largely on the skills, experience and performance of key members of our executive management team and others in key management positions. The collective efforts of each member of the executive team and others working with them as a team are critical to us as we continue to develop our technologies, products, services, assays and research and development and sales programs. As a result of the difficulty in locating qualified new management, the loss or incapacity of existing members of our executive management team could adversely affect our operations. If we were to lose one or more of these key employees, we could experience difficulties in finding qualified successors, competing effectively, developing our technologies and implementing our business strategy. Our executive management team each have employment agreements, however, the existence of an employment agreement does not guarantee retention of members of our executive management team and we may not be able to retain those individuals for the duration of or beyond the end of their respective terms. We do not maintain "key person" life insurance on any of our employees.

In addition, we rely on collaborators, consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our collaborators, consultants and advisors are generally employed by employers other than us and may have commitments under agreements with other entities that may limit their availability to us.

The loss of a key employee, the failure of a key employee to perform in his or her current position or our inability to attract and retain skilled employees could result in our inability to continue to grow our business or to implement our business strategy.

There is a scarcity of experienced professionals in our industry. If we are not able to retain and recruit personnel with the requisite technical skills, we may be unable to successfully execute our business strategy.

The specialized nature of our industry results in an inherent scarcity of experienced personnel in the field. Our future success depends upon our ability to attract and retain highly skilled personnel, including scientific, technical, commercial, business, regulatory and administrative personnel, necessary to support our anticipated growth, develop our business and perform certain contractual obligations. Given the scarcity of professionals with the scientific knowledge that we require and the competition for qualified

personnel among life science businesses, we may not succeed in attracting or retaining the personnel we require to continue and grow our operations.

Our failure to continue to attract, hire and retain a sufficient number of qualified sales professionals would hamper our ability to increase demand for our products and diagnostic assays, to expand geographically and to successfully commercialize any other products or assays we may develop.

To succeed in selling our products and diagnostic assays and any other products or assays that we are able to develop, we must expand our sales force in the United States and/or internationally by recruiting additional sales representatives with extensive experience in oncology and established relationships with medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists, oncology nurses, and other physicians and hospital personnel, as well as laboratory supply distributors. To achieve our marketing and sales goals, we will need to continue to build our sales and commercial infrastructure. Sales professionals with the necessary technical and business qualifications are in high demand, and there is a risk that we may be unable to attract, hire and retain the number of sales professionals with the right qualifications, scientific backgrounds and relationships with decision-makers at potential customers needed to achieve our sales goals. We expect to face competition from other companies in our industry, some of whom are much larger than us and who can pay greater compensation and benefits than we can, in seeking to attract and retain qualified sales and marketing employees. If we are unable to hire and retain qualified sales and marketing personnel, our business will suffer.

Our dependence on commercialization partners for sales of products, assays and services could limit our success in realizing revenue growth.

We intend to grow our business through the use of commercialization partners for the sales, marketing and commercialization of our current products, assays and services, as well as our planned future products, assays and services, and to do so we must enter into agreements with these partners to sell, market or commercialize our products, assays and services. These agreements may contain exclusivity provisions and generally cannot be terminated without cause during the term of the agreement. We may need to attract additional partners to expand the markets in which we sell products or assays. These partners may not commit the necessary resources to market and sell our products and diagnostics assays to the level of our expectations, and we may be unable to locate suitable alternatives should we terminate our agreement with such partners or if such partners terminate their agreement with us.

If current or future commercialization partners do not perform adequately, or we are unable to locate commercialization partners, we may not realize revenue growth.

We depend on third parties for the supply of blood samples and other biological materials that we use in our research and development efforts. If the costs of such samples and materials increase or our third-party suppliers terminate their relationship with us, our business may be materially harmed.

We have relationships with suppliers and institutions that provide us with blood samples and other biological materials that we use in developing and validating our current assays and our planned future assays. If one or more suppliers terminate their relationship with us or are unable to meet our requirements for samples, we will need to identify other third parties to provide us with blood samples and biological materials, which could result in a delay in our research and development activities and negatively affect our business. In addition, as we grow, our research and academic institution collaborators may seek additional financial contributions from us, which may negatively affect our results of operations. To the extent that the third parties supplying us with blood samples or other biological materials are impacted by the COVID-19 pandemic, our costs and availability of such supplies may be impacted.

We currently rely on third-party suppliers for our BCTs, shipping kits, and critical materials needed to perform our current assays, as well as our planned future products, assays and services, and any problems experienced by them could result in a delay or interruption of their supply to us.

We currently purchase our BCTs and raw materials for our microfluidic channels and assay reagents under purchase orders and do not have long-term contracts with most of the suppliers of these materials. If suppliers were to delay or stop producing our BCTs, shipping kits, materials or reagents, or if the prices they charge us were to increase significantly, or if they elected not to sell to us, we would need to identify other suppliers. We could experience delays in obtaining BCTs and shipping kits, manufacturing the microfluidic channels, or performing assays while finding another acceptable supplier, which could impact our results of operations. The changes could also result in increased costs associated with qualifying the new BCTs, shipping kits, materials or reagents and in increased operating costs. Further, any prolonged disruption in a supplier's operations could have a significant negative impact on our ability to perform diagnostic assays in a timely manner and sell our products. If our third-party suppliers' operations are impacted by the COVID-19 pandemic, we may experience supply delays or interruptions.

Some of the components used in our current or planned future products are currently sourced from a supplier for which alternative suppliers exist but we have not validated the products of such alternative suppliers, and substitutes for these components might not be able to be obtained easily or may require substantial design or manufacturing modifications. Any significant problem experienced by

any one of our suppliers may result in a delay or interruption in the supply of components to us until that supplier cures the problem or an alternative source of the component is located and qualified. Any delay or interruption would likely lead to a delay or interruption in our manufacturing operations or product sales. The inclusion of substitute components must meet our product specifications and could require us to qualify the new supplier with the appropriate government regulatory authorities.

If we were sued for product liability or professional liability, we could face substantial liabilities that exceed our resources.

The marketing, sale and use of our products and current assays, as well our planned future products, assays and services, could lead to the filing of product liability claims against us if someone alleges that our products or assays failed to perform as designed. We may also be subject to liability for errors in the assay results we provide to physicians or for a misunderstanding of, or inappropriate reliance upon, the information we provide. A product liability or professional liability claim could result in substantial damages and be costly and time-consuming for us to defend.

Although we believe that our existing product and professional liability insurance is adequate, our insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims. Any product liability or professional liability claim brought against us, with or without merit, could increase our insurance rates or prevent us from securing insurance coverage in the future. Additionally, any product liability lawsuit could damage our reputation, result in the recall of products or assays, or cause current partners to terminate existing agreements and potential partners to seek other partners, any of which could impact our results of operations.

If we use biological and hazardous materials in a manner that causes injury, we could be liable for damages.

Our activities currently require the controlled use of potentially harmful biological materials and chemicals. We cannot eliminate the risk of accidental contamination or injury to employees or third parties from the use, storage, handling or disposal of these materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could exceed our resources or any applicable insurance coverage we may have. Additionally, we are subject to, on an ongoing basis, federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products. The cost of compliance with these laws and regulations may become significant and could have a material adverse effect on our financial condition, results of operations and cash flows. In the event of an accident or if we otherwise fail to comply with applicable regulations, we could lose our permits or approvals or be held liable for damages or penalized with fines.

We may acquire other businesses or form joint ventures or make investments in other companies or technologies that could harm our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.

As part of our business strategy, we may pursue acquisitions of businesses and assets. We also may pursue strategic alliances and joint ventures that leverage our core technology and industry experience to expand our offerings or distribution. We have no experience with acquiring other companies and limited experience with forming strategic alliances and joint ventures. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in significant write-offs or the incurrence of debt and contingent liabilities, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. Integration of an acquired company also may disrupt ongoing operations and require management resources that would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a material negative effect on our results of operations. We may not identify or complete these transactions in a timely manner, on a cost-effective basis, or at all, and we may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions or joint ventures, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration. Alternatively, it may be necessary for us to raise additional funds for acquisitions through public or private financings. Additional funds may not be available on terms that are favorable to us, or at all.

If we cannot support demand for our current products, assays and services, as well as our planned future products, assays and services, including successfully managing the evolution of our laboratory service, our business could suffer.

As our product and assay volume grows, we will need to increase our assay capacity, implement automation, increase our scale and related processing, customer service, billing, collection and systems process improvements and expand our internal quality assurance program and technology to support assays on a larger scale. Examples of challenges we may face include, but are not limited to, maintaining the same validated sensitivity in our assays for both CTC and ctDNA analysis as our assay volume increases. We will also need additional clinical laboratory scientists and other scientific and technical personnel to process these additional assays. Any

increases in scale, related improvements and quality assurance may not be successfully implemented and appropriate personnel may not be available. As additional products, assays and services are commercialized, we may need to bring new equipment online, implement new systems, technology, controls and procedures and hire personnel with different qualifications. Failure to implement or maintain necessary procedures or to hire the necessary personnel could result in a higher cost of processing or an inability to meet market demand. We cannot assure you that we will be able to perform assays on a timely basis, or procure BCTs, shipping kits or other materials we sell, at a level consistent with demand, that our efforts to scale our commercial operations will not negatively affect the quality of our assay results, or that we will respond successfully to the growing complexity of our operations. If we encounter difficulty meeting market demand or quality standards for our current products, assays and services and our planned future products, assays and services, including with respect to our assays our ability to maintain the sensitivity, specificity, concordance and reproducibility of such assays, our reputation could be harmed, and our future prospects and business could suffer, which may have a material adverse effect on our financial condition, results of operations and cash flows.

Billing for our diagnostic assays is complex, and we must dedicate substantial time and resources to the billing process to be paid.

Billing for clinical laboratory assay services is complex, time-consuming and expensive. Depending on the billing arrangement and applicable law, we bill various payers, including Medicare, insurance companies and patients, all of which have different billing requirements. We generally bill third-party payers for our diagnostic assays and pursue reimbursement on a case-by-case basis where pricing contracts are not in place. To the extent laws or contracts require us to bill patient co-payments or co-insurance, we must also comply with these requirements. We may also face increased risk in our collection efforts, including potential write-offs of doubtful accounts and long collection cycles, which could adversely affect our business, results of operations and financial condition.

Several factors make the billing process complex, including:

- differences between the list price for our assays and the reimbursement rates of payers;
- compliance with complex federal and state regulations related to billing Medicare;
- risk of government audits related to billing Medicare;
- disputes among payers as to which party is responsible for payment;
- differences in coverage and in information and billing requirements among payers, including the need for prior authorization and/or advanced notification;
- the effect of patient co-payments or co-insurance;
- changes to billing codes and/or coverage policies that apply to our assays;
- incorrect or missing billing information; and
- the resources required to manage the billing and claims appeals process.

We use standard industry billing codes, known as Current Procedural Terminology, or CPT, codes, to bill for our diagnostic assays. These codes can change over time. When codes change, there is a risk of an error being made in the claim adjudication process. These errors can occur with claims submission, third-party transmission or in the processing of the claim by the payer. Claim adjudication errors may result in a delay in payment processing or a reduction in the amount of the payment received. Coding changes, therefore, may have an adverse effect on our revenues. There can be no assurance that payers will recognize these codes in a timely manner or that the process of transitioning to such a code and updating their billing systems and ours will not result in errors, delays in payments and a related increase in accounts receivable balances.

As we introduce new assays, we will need to add new codes to our billing process as well as our financial reporting systems. Failure or delays in effecting these changes in external billing and internal systems and processes could negatively affect our collection rates, revenue and cost of collecting.

Additionally, our billing activities require us to implement compliance procedures and oversight, train and monitor our employees, challenge coverage and payment denials, assist patients in appealing claims, and undertake internal audits to evaluate compliance with applicable laws and regulations as well as internal compliance policies and procedures. Payers also conduct external audits to evaluate payments, which add further complexity to the billing process. If the payer makes an overpayment determination, there is a risk that we may be required to return some portion of prior payments we have received. These billing complexities, and the related uncertainty in obtaining payment for our assays, could negatively affect our revenue and cash flow, our ability to achieve profitability, and the consistency and comparability of our results of operations.

We rely on third-party billing provider software, and an in-house billing function, to transmit claims to payers, and any delay in transmitting claims could have an adverse effect on our revenue.

While we manage the overall processing of claims, we rely on third-party billing provider software to transmit the actual claims to payers based on the specific payer billing format. We have previously experienced delays in claims processing when our third-party provider made changes to its invoicing system. Additionally, coding for diagnostic assays may change, and such changes may cause short-term billing errors that may take significant time to resolve. If claims are not submitted to payers on a timely basis or are erroneously submitted, or if we are required to switch to a different software provider to handle claim submissions, we may experience delays in our ability to process these claims and receipt of payments from payers, or possibly denial of claims for lack of timely submission, which would have an adverse effect on our revenue and our business.

We may encounter manufacturing problems or delays that could result in lost revenue.

We currently manufacture our proprietary microfluidic channels at our San Diego facility and intend to continue to do so. We believe we currently have adequate manufacturing capacity for our microfluidic channels. If demand for our current products, assays and services and our planned future products, assays and services increases significantly, we will need to either expand our manufacturing capabilities or outsource to other manufacturers. If we or third-party manufacturers engaged by us fail to manufacture and deliver our microfluidic channels or certain reagents in a timely manner, our relationships with our customers could be seriously harmed. We cannot assure you that manufacturing, or quality control problems will not arise as we attempt to increase the production of our microfluidic channels or reagents or that we can increase our manufacturing capabilities and maintain quality control in a timely manner or at commercially reasonable costs. If we cannot manufacture our microfluidic channels consistently on a timely basis because of these or other factors, it could have a significant negative impact on our ability to perform assays and generate revenues. We may encounter supply chain constraints in obtaining the raw materials needed to manufacture our products due to the impact of the COVID-19 pandemic.

International expansion of our business would expose us to business, regulatory, political, operational, financial and economic risks associated with doing business outside of the United States.

Our business strategy is to pursue increased international expansion, including partnering with academic and commercial testing laboratories, and introducing our technology outside the United States as part of in vitro diagnostic (IVD) test kits and/or testing systems utilizing our technologies. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as tax laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us or our distributors to obtain regulatory approvals for the sale or use of our current products or assays and our planned future products or assays in various countries;
- difficulties in managing foreign operations;
- complexities associated with managing government payer systems, multiple payer-reimbursement regimes or self-pay systems;
- logistics and regulations associated with shipping blood samples, including infrastructure conditions and transportation delays;
- limits on our ability to penetrate international markets if our current products or assays and our planned future products or assays cannot be processed by an appropriately qualified local laboratory;
- financial risks, such as longer payment cycles, difficulty enforcing contracts and collecting accounts receivable and exposure to foreign currency exchange rate fluctuations;
- reduced protection for intellectual property rights, or lack of them in certain jurisdictions, forcing more reliance on our trade secrets, if available;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions; and
- failure to comply with the Foreign Corrupt Practices Act, including its books and records provisions and its anti-bribery provisions, by maintaining accurate information and control over sales activities and distributors' activities.

Any of these risks, if encountered, could significantly harm our future international expansion and operations and consequently, have a material adverse effect on our financial condition, results of operations and cash flows.

General economic or business conditions may have a negative impact on our business.

Continuing concerns over United States health care reform legislation and energy costs, geopolitical issues, the availability and cost of credit and government stimulus programs in the United States and other countries have contributed to increased volatility and diminished expectations for the global economy. These factors, combined with low business and consumer confidence and high

unemployment, precipitated an economic slowdown and recession. If the economic climate deteriorates, our business, including our access to patient samples and the addressable market for products or diagnostic assays that we may successfully develop, as well as the financial condition of our suppliers and our third-party payers, could be adversely affected, resulting in a negative impact on our business, financial condition and results of operations.

If our security measures, or those maintained on our behalf, are compromised now, or in the future, or the security, confidentiality, integrity or availability of our information systems, software, services, networks, communications or data is compromised, limited or fails, our business could experience a material adverse impact, including, without limitation, a material interruption to our operations, harm to our reputation, significant fines, penalties, liability, breach or triggering of data protection laws, policies, or other data protection obligations, or a loss of customers or sales.

In the ordinary course of our business, we may collect, process, store and transmit proprietary, confidential and sensitive information, personal data (including health information), intellectual property, trade secrets, and proprietary business information owned or controlled by ourselves or other parties. Additionally, we depend on information technology and telecommunications systems for significant aspects of our operations. In addition, our third-party billing software provider depends upon telecommunications and data systems provided by outside vendors and information we provide on a regular basis. These information technology and telecommunications systems support a variety of functions, including assay processing, sample tracking, quality control, customer service and support, billing and reimbursement, research and development activities and our general and administrative activities.

Despite the implementation of security measures, however, our infrastructure, or the infrastructure of third parties upon whom we rely (including the Internet and related systems), may be vulnerable to physical break-ins, fires, telecommunications or network failures, malicious human acts and natural disasters. Moreover, despite network security and back-up measures, some of our servers are potentially vulnerable to physical or electronic break-ins, and similar disruptive problems. Cyberattacks, malicious internet-based activity and online and offline fraud are prevalent and continue to increase. These threats are becoming increasingly difficult to detect. In addition to traditional computer “hackers,” threat actors, software bugs, malicious code (such as viruses and worms), personnel misconduct or error, employee theft or misuse, denial-of-service attacks (such as credential stuffing), and ransomware attacks, sophisticated nation-state and nation-state supported actors now engage in attacks (including advanced persistent threat intrusions). We may also be the subject of phishing attacks, viruses, malware installation, server malfunction, software or hardware failures, loss of data or other computer assets, adware or other similar issues. Additionally, ransomware attacks, including those from organized criminal threat actors, nation-states and nation-state supported actors, are becoming increasingly prevalent and severe and can lead to significant interruptions, delays, or outages in our operations, disruption of clinical trials, loss of data (including data related to clinical trials, loss of income, significant extra expenses to restore data or systems, reputational loss and the diversion of funds. To alleviate the financial, operational and reputational impact of a ransomware attack it may be preferable to make extortion payments, but we may be unwilling or unable to do so (including, for example, if applicable laws or regulations prohibit such payments). Similarly, supply chain attacks have increased in frequency and severity, and we cannot guarantee that third parties and infrastructure in our supply chain have not been compromised or that they do not contain exploitable defects or bugs that could result in a breach of or disruption to our platform, systems and networks or the systems and networks of third parties that support us and our services. Despite the security controls we have in place, such attacks are very difficult to avoid. Additionally, due to the COVID-19 pandemic and our remote workforce, there is an increased risk to our information technology assets and data. We may expend significant resources, fundamentally change our business activities and practices, or modify our operations in an effort to protect against security incidents and to mitigate, detect and remediate actual and potential vulnerabilities.

Any of the aforementioned threats and other similar attacks, disruptions or accidents could cause a security incident, which, in turn, could result in unauthorized access to, damage to, disablement or encryption of, use or misuse of, disclosure of, modification of, destruction of, or loss of our data or our customers’ data, or disrupt our ability to provide our platform or our service providers’ ability to support our services or develop or deliver our products. For example, despite the precautionary measures we have taken to prevent unanticipated problems that could affect our information technology and telecommunications systems, failures or significant downtime of our information technology or telecommunications systems or those used by our third-party service providers could prevent us from processing assays, providing assay results to medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists, other physicians, billing payers, processing reimbursement appeals, handling patient or physician inquiries, conducting research and development activities and managing the administrative aspects of our business. Any disruption or loss of information technology or telecommunications systems on which critical aspects of our operations depend could have an adverse effect on our business. Furthermore, if we or any third party upon whom we rely experience a security incident, or are perceived to have experienced a security incident, it could result in: government enforcement actions that could include investigations, fines, penalties, audits and inspections; additional reporting requirements and/or oversight; temporary or permanent bans on all or some processing of personal data (which could impact our ability to conduct tests or develop our products); or orders to destroy or not use personal data. Further, individuals or other relevant stakeholders could sue us for our actual or perceived failure to comply with our security obligations including, without limitation, in class action litigation. Security incidents could also result in indemnity obligations, negative publicity and financial loss. Security incidents and vulnerabilities may cause some of our customers and users to stop using our services and our failure, or perceived failure, to meet expectations with regard to the security, integrity, availability and confidentiality of our systems and sensitive data could damage our reputation and affect our ability to retain customers, attract new

customers and grow our business. There can be no assurance that the limitations of liability in our contracts would be enforceable or adequate or would otherwise protect us from liabilities or damages if we fail to comply with applicable data protection laws, contracts, policies or data other protection obligations related to information security or security incidents.

Applicable data protection laws, contracts, policies and other data protection obligations may require us to notify relevant stakeholders of security including affected individuals, customers, regulators, the media and others. For example, HIPAA, as amended by HITECH and subsequently by the final omnibus rule adopted in 2013, imposes notification requirements on covered entities in the event that certain health information has been used, accessed or disclosed without authorization. Additionally, all fifty states have laws requiring notification of affected individuals and/or state regulators in the event of a breach of personal information, which is a broader class of information than the health information protected by HIPAA. Many state laws impose additional data security requirements, such as encryption or mandatory contractual terms to ensure ongoing protection of personal information. Disclosures following a security incident may be costly, and the disclosure or the failure to comply with such requirements could lead to material adverse impacts such as negative publicity, loss of customer confidence in our services or security measures, investigations and private or government claims.

Regulatory Risks Relating to Our Business

Healthcare policy changes, including recently enacted legislation reforming the U.S. health care system, may have a material adverse effect on our financial condition, results of operations and cash flows.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the ACA, enacted in March 2010, made a number of substantial changes in the way health care is financed by both governmental and private insurers.

Although some of these provisions may negatively impact payment rates for clinical laboratory tests, the ACA also extends coverage to over 30 million previously uninsured people, which resulted in an increase in the demand for our current assays and our planned future assays. There have been executive, judicial and Congressional challenges to certain aspects of the ACA. For example, President Trump signed several executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed repeal legislation, it has enacted laws that modify certain provisions of the ACA such as removing penalties effective January 1, 2019, for not complying with the ACA's individual mandate to carry health insurance and eliminating the implementation of certain ACA-mandated fees, including but not limited the Medical Device Excise Tax. On June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, which began on February 15, 2021 and will remain open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how such challenges and the healthcare reform measures of the Biden administration will impact the ACA.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. The Protecting Access to Medicare Act of 2014, or PAMA, was signed to law, which, among other things, significantly altered the current payment methodology under the Medicare Clinical Laboratory Fee Schedule, or CLFS. Beginning in 2017 and every three years thereafter (or annually in the case of advanced diagnostic laboratory tests), applicable clinical laboratories must report laboratory test payment data for each Medicare-covered clinical diagnostic laboratory test that it furnishes during the specified time period. The reported data must include the payment rate (reflecting all discounts, rebates, coupons and other price concessions) and the volume of each test that was paid by each private payer (including health insurance issuers, group health plans, Medicare Advantage plans and Medicaid managed care organizations). Effective January 1, 2018, the Medicare payment rate for each clinical diagnostic laboratory test is equal to the weighted median amount for the test from the most recent data collection period. The payment rate applies to laboratory tests furnished by a hospital laboratory if the test is separately paid under the hospital outpatient prospective payment system. The PAMA rate changes to our tests that were impacted did not materially affect our payments beginning in 2018; however, we cannot predict how this may change future payment in coming years. In January 2020, CMS announced that data reporting for clinical diagnostic laboratory tests was delayed by one year. Additionally, the Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, which was signed into law in March 2020 and was designed to provide financial support and resources to individuals and businesses affected by the COVID-19 pandemic, further delayed the reporting period. The next data reporting period is now January 1, 2022 through March 31, 2022 and will be based on the data collection period of January 1, 2019 through June 30, 2019. CMS further clarified that reporting will resume on a three-year cycle thereafter (i.e. 2025, 2028, etcetera). In addition, CMS updated the statutory phase-in provisions such that, for 2020, the rates for clinical diagnostic laboratory tests may not be reduced by more than 10% of the rates for 2019. Pursuant to the CARES Act, the statutory phase-in of payment reductions has been extended through 2024, with a 0%

reduction cap for 2021, and a 15% reduction cap for each of 2022, 2023, and 2024. It is unclear what impact new quality and payment programs or new pricing structures, such as those adopted under PAMA, may have on our business, financial condition, results of operations, or cash flows.

Also, under PAMA, CMS is required to adopt temporary billing codes to identify new tests and new advanced diagnostic laboratory tests that have been cleared or approved by the FDA. For an existing test that is cleared or approved by the FDA and for which Medicare payment is made as of April 1, 2014, CMS is required to assign a unique billing code if one has not already been assigned by the agency. In addition to assigning the code, CMS is required to publicly report payment for the tests. Further, under PAMA, CMS is required to adopt temporary billing codes to identify new tests and new advanced diagnostic laboratory tests that have been cleared or approved by the FDA. We cannot determine at this time the full impact of PAMA, including its implementing regulations, on our business, financial condition and results of operations.

Additionally, the Budget Control Act of 2011, among other things, created the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee did not achieve its targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers and suppliers of up to 2% per fiscal year, starting in 2013, and, due to subsequent legislative amendments to the statute, will remain in effect through 2030 unless additional congressional action is taken. COVID-19 relief legislation suspended the 2% Medicare sequester from May 1, 2020 through December 31, 2021. The full impact on our business the sequester law is uncertain. In addition, the Middle-Class Tax Relief and Job Creation Act of 2012, or MCTRJCA, mandated an additional change in Medicare reimbursement for clinical laboratory tests.

In April 2020, the CMS announced that it would increase the reimbursement for certain COVID-19 molecular tests making use of high-throughput technologies developed by the private sector that allow for increased testing capacity, faster results, and more effective means of combating the spread of the virus to $100 per test, effective April 14, 2020. However, beginning January 1, 2021, Medicare changed the base reimbursement rate for COVID-19 diagnostic tests run on high-throughput technologies to $75 per test with an additional payment of $25 per test if certain additional requirements are met. We are currently reviewing how this reimbursement policy will impact laboratories and the patients we serve.

Some of our laboratory assay business is subject to the Medicare Physician Fee Schedule and, under the current statutory formula, the rates for these services are updated annually. For the past several years, the application of the statutory formula would have resulted in substantial payment reductions if Congress failed to intervene. In the past, Congress passed interim legislation to prevent the decreases. If Congress fails to intervene to prevent the negative update factor in future years, the resulting decrease in payment may adversely affect our revenue and results of operations. If in future years Congress does not adopt interim legislation to block or offset, and/or CMS does not moderate, any substantial CMS-proposed reimbursement reductions, the resulting decrease in payments from Medicare could adversely impact our revenues and results of operations.

In addition, it is possible that additional governmental action is taken in response to the COVID-19 pandemic.

We cannot predict whether future health care initiatives will be implemented at the federal or state level, particularly in light of the new presidential administration, or how any future legislation or regulation may affect us. For example, based on a recent executive order, the Biden administration expressed its intent to pursue certain policy initiatives to reduce drug prices. The expansion of government's role in the U.S. health care industry, and changes to the reimbursement amounts paid by Medicare and other payers for our current assays and our planned future assays, may reduce our profits, if any, and have a materially adverse effect on our business, financial condition, results of operations and cash flows. Moreover, Congress has proposed on several occasions to impose a 20% coinsurance payment requirement on patients for clinical laboratory tests reimbursed under the CLFS, which would require us to bill patients for these amounts. In the event that Congress were to ever enact such legislation, the cost of billing and collecting for our assays could often exceed the amount actually received from the patient.

Our commercial success could be compromised if hospitals or other clients do not pay our invoices or if third-party payers, including managed care organizations and Medicare, do not provide coverage and reimbursement, breach, rescind or modify their contracts or reimbursement policies or delay payments for our current assays and our planned future assays.

Medical oncologists, neuro-oncologists, surgical oncologists, urologists, pulmonologists, pathologists and other physicians may not order our current assays and our planned future assays unless third-party payers, such as managed care organizations and government payers (e.g., Medicare and Medicaid), pay a substantial portion of the assay price. Coverage and reimbursement by a third-party payer may depend on a number of factors, including a payer's determination that assays using our technologies are:

- not experimental or investigational;
- medically necessary;
- appropriate for the specific patient;

- cost-effective;
- supported by peer-reviewed publications; and
- included in clinical practice guidelines.

Uncertainty surrounds third-party payer coverage and adequate reimbursement of any test incorporating new technology, including tests developed using our technologies. Technology assessments of new medical tests conducted by research centers and other entities may be disseminated to interested parties for informational purposes. Third-party payers and health care providers may use such technology assessments as grounds to deny coverage for a test or procedure. Technology assessments can include evaluation of clinical utility studies, which define how a test is used in a particular clinical setting or situation.

Because each payer generally determines for its own enrollees or insured patients whether to cover or otherwise establish a policy to reimburse our diagnostic assays, seeking payer approvals is a time-consuming and costly process. We cannot be certain that coverage for our current assays and our planned future assays will be provided in the future by additional third-party payers or that existing agreements, policy decisions or reimbursement levels will remain in place or be fulfilled under existing terms and provisions. If we cannot obtain coverage and adequate reimbursement from private and governmental payers such as Medicare and Medicaid for our current assays, or new assays or assay enhancements that we may develop in the future, our ability to generate revenues could be limited, which may have a material adverse effect on our financial condition, results of operations and cash flow. Further, we may experience delays and interruptions in the receipt of payments from third-party payers due to missing documentation and/or other issues, which could cause delay in collecting our revenue.

In addition, to the extent that our assays are ordered for Medicare inpatients and outpatients, only the hospital may receive payment from the Medicare program for the technical component of pathology services and any clinical laboratory services that we perform, unless the testing is ordered at least 14 days after discharge and certain other requirements are met. We therefore must look to the hospital for payment for these services under these circumstances. If hospitals refuse to pay for the services or fail to pay in a timely manner, our ability to generate revenues could be limited, which may have a material adverse effect on our financial condition, results of operations and cash flow.

We expect to depend on Medicare and a limited number of private payers for a significant portion of our revenues and if these or other payers stop providing reimbursement or decrease the amount of reimbursement for our current assays and our planned future assays, our revenues could decline.

Approximately 51% and 44% of total net revenues during the year ended December 31, 2020 and the six months ended June 30, 2021, respectively, were associated with Medicare and CARES Act reimbursement. Approximately 20% and 28% of total net revenues during the year ended December 31, 2020 and the three months ended June 30, 2021, respectively, were associated with Blue Cross Blue Shield reimbursement. We cannot assure you that, even if our current assays and our planned future assays are otherwise successful, reimbursement for the currently Medicare and Blue Cross Blue Shield covered-portions of our current assays and our planned future assays would, without such contracted payer reimbursement for the capture/enumeration portion, produce sufficient revenues to enable us to reach profitability and achieve our other commercial objectives.

Medicare and other third-party payers may change their coverage policies or cancel future contracts with us at any time, review and adjust the rate of reimbursement or stop paying for our assays altogether, which would reduce our total revenues. Payers have increased their efforts to control the cost, utilization and delivery of health care services. In the past, measures have been undertaken to reduce payment rates for and decrease utilization of clinical laboratory testing generally. Because of the cost-trimming trends, third-party payers that currently cover and provide reimbursement for our current assays and our planned future assays may suspend, revoke or discontinue coverage at any time, or may reduce the reimbursement rates payable to us. Any such action could have a negative impact on our revenues, which may have a material adverse effect on our financial condition, results of operations and cash flows.

In addition, we are currently considered a “non-contracted provider” by many private payers because we have not entered into a specific contract to provide diagnostic assays to their insured patients at specified rates of reimbursement. Additionally, a significant amount of our non-Medicare business (private payers) has historically not been contracted, and reimbursement for this business has historically not been at “in network” rates and has therefore been inconsistent. We first began to contract private payer networks in 2015, and since then our number of accessions treated as “in network” has increased as we continue to execute additional contracts, and reimbursement is improving. We are currently contracted with nine preferred provider organization networks, three large health plans, and five regional independent physician associations, and expect to continue to gain contracts in order to be considered as an “in-network” provider with additional plans. If we were to become a contracted provider with additional payers in the future, the amount of overall reimbursement we receive would likely decrease because we could be reimbursed less money per assay performed at a contracted rate than at a non-contracted rate, which could have a negative impact on our revenues. Further, we typically are unable to collect payments from patients beyond that which is paid by their insurance and will continue to experience lost revenue as a result.

Because of certain Medicare billing policies, we may not receive complete reimbursement for assays provided to Medicare patients. Medicare reimbursement revenues are an important component of our business model, and private payers sometimes look to Medicare determinations when making their own payment determinations; therefore, incomplete or inadequate reimbursement from Medicare would negatively affect our business.

Medicare has coverage policies that can be national or regional in scope. Coverage means that assay is approved as a benefit for Medicare beneficiaries. If there is no coverage, neither the supplier nor any other party, such as a reference laboratory, may receive reimbursement from Medicare for the service. There is currently no national coverage policy regarding the CTC enumeration portion of our assays. Because our laboratory is in California, the regional Medicare Administrative Contractor, or MAC, for California is the relevant MAC for all our assays. The previous MAC for California, Palmetto, which is contracted with CMS to administer the Molecular Diagnostic Services, or MolDx, program that sets guidelines for coding, coverage and reimbursement of molecular diagnostic assays, adopted a negative coverage policy for CTC enumeration. The current MAC for California, Noridian Healthcare Solutions, LLC, is adopting the coverage policies from Palmetto. Therefore, the enumeration portion of our assays is not currently covered, and we will receive no payment from Medicare for this portion of the service unless and until the coverage policy is changed. Although approximately 86% and 89% of all billable cases received, excluding COVID-19 testing cases, during the year ended December 31, 2020 and the six months ended June 30, 2021, respectively, relate to our Target-Selector™ biomarker assays, we continue to receive orders for traditional enumeration testing, which counts disease burden, and therefore the enumeration testing receives no payment from Medicare based upon the existing coverage decision. The CTC enumeration counts disease burden and is a prognostic assay, and although valuable, it does not meet many of the medical necessity requirements of Medicare and the payers. We intend to pursue payment for the capture portion of our CTC technology that allows us to run our diagnostic testing for some of our Target-Selector™ assays.

We cannot assure you that, even if our current assays and our planned future assays are otherwise successful, reimbursement for the currently Medicare, Blue Cross Blue Shield, and United Healthcare-covered portions of our current assays and our planned future assays would, without such contracted payer reimbursement for the capture/enumeration portion, produce sufficient revenues to enable us to reach profitability and achieve our other commercial objectives.

The processing of Medicare claims is subject to change at CMS' discretion at any time. Cost containment initiatives may be a threat to Medicare reimbursement levels (including for the covered components of our current assays and our planned future assays, including FISH analysis and molecular assays) for the foreseeable future.

We may not receive breakthrough device designation by the FDA for our Target-Selector CSF Assay, and even if we do, such designation may not lead to a faster development, regulatory review or clearance process, and it may not increase the likelihood that the assay will receive marketing authorization from the FDA.

Following the full commercial launch of our CSF assay, CNSide™, we submitted an initial application for Breakthrough Device Designation to the FDA in the second quarter of 2021. While that initial submission was denied, we intend to continue to pursue Breakthrough Device Designation for CNSide™ and are gathering data based on the feedback provided by the FDA to further support the submission. The FDA's breakthrough devices program is a voluntary program for certain medical devices that provide for more effective treatment or diagnosis of life-threatening or irreversibly debilitating diseases or conditions. The goal of the program is to provide patients and healthcare providers with timely access to these medical devices by speeding up their development, assessment and review, while preserving the statutory standards for premarket approval, 510(k) clearance and de novo marketing authorization, consistent with the FDA's mission to protect and promote public health.

Even if received, breakthrough device designation may not result in a faster development process, review or clearance compared to conventional FDA procedures and does not assure ultimate marketing authorization by the FDA. In addition, even if a product qualifies as a breakthrough device, the FDA may later decide that the product no longer meets the conditions for qualification and revoke such designation.

Long payment cycles of Medicare, Medicaid and/or other third-party payers, or other payment delays, could hurt our cash flows and increase our need for working capital.

Medicare and Medicaid have complex billing and documentation requirements that we must satisfy in order to receive payment, and the programs can be expected to carefully audit and monitor our compliance with these requirements. We must also comply with numerous other laws applicable to billing and payment for healthcare services, including, for example, privacy laws. Failure to comply with these requirements may result in, among other things, non-payment, refunds, exclusion from government healthcare programs, and civil or criminal liabilities, any of which may have a material adverse effect on our revenues and earnings. In addition, failure by third-party payers to properly process our payment claims in a timely manner could delay our receipt of payment for our products and services, which may have a material adverse effect on our cash flows.

Complying with numerous regulations pertaining to our business is an expensive and time-consuming process, and any failure to comply could result in substantial penalties.

We are subject to CLIA, a federal law regulating clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. Our clinical laboratory must be certified under CLIA in order for us to perform testing on human specimens. CLIA is intended to ensure the quality and reliability of clinical laboratories in the United States by mandating specific standards in the areas of personnel qualifications, administration, and participation in proficiency testing, patient test management, quality control, quality assurance and inspections. We have a current certificate of accreditation under CLIA to perform high complexity testing, and our laboratory is accredited by one of the CLIA-approved accreditation organizations. To renew this certificate, we are subject to survey and inspection every two years. Moreover, CLIA and CAP inspectors may make periodic inspections of our clinical laboratory outside of the renewal process. The failure to comply with CLIA or CAP requirements can result in enforcement actions, including the revocation, suspension, or limitation of our CLIA and/or CAP certificate of accreditation, as well as a directed plan of correction, state on-site monitoring, civil money penalties, civil injunctive suit and/or criminal penalties. We must maintain CLIA compliance and certification to be eligible to bill for assays provided to Medicare beneficiaries. If we were to be found out of compliance with CLIA program requirements and subjected to sanctions, our business and reputation could be harmed. Even if it were possible for us to bring our laboratory back into compliance, we could incur significant expenses and potentially lose revenue in doing so.

In addition, our laboratory is located in California and is required by state law to have a California state license; as we expand our geographic focus, we may need to obtain laboratory licenses from additional states. California laws establish standards for operation of our clinical laboratory, including the training and skills required of personnel and quality control. In addition, we hold licenses from the states of Pennsylvania, Maryland and Rhode Island to test specimens from patients in those states or received from ordering physicians in those states. In addition, our clinical reference laboratory is required to be licensed on a product-specific basis by New York as an out of state laboratory and our products, as LDTs, must be approved by the New York State Department of Health before they are offered in New York. As part of this process, the State of New York requires validation of our assays. We currently do not have the necessary New York license, but we are in the process of addressing the requirements for licensure in New York. Other states may have similar requirements or may adopt similar requirements in the future. Finally, we may be subject to regulation in foreign jurisdictions if we seek to expand international distribution of our assays outside the United States.

If we were to lose our CLIA certification or California or other state laboratory license, whether as a result of a revocation, suspension or limitation, we would no longer be able to offer our assays, which would limit our revenues and harm our business. If we were to lose, or fail to obtain, a license in any other state where we are required to hold a license, we would not be able to test specimens from those states. If we were to lose our CAP accreditation, our reputation for quality, as well as our business, financial condition and results of operations, could be significantly and adversely affected.

If the FDA were to begin requiring approval or clearance of our current products or assays and our planned future products or assays, we could incur substantial costs and time delays associated with meeting requirements for pre-market clearance or approval or we could experience decreased demand for, or reimbursement of, our assays.

We provide our assays as LDTs. Historically; the FDA has exercised enforcement discretion with respect to most LDTs and has not required laboratories that offer LDTs to comply with the agency's requirements for medical devices (e.g., establishment registration, device listing, quality systems regulations, premarket clearance or premarket approval, and post-market controls). In recent years, however, the FDA has stated it intends to end its policy of enforcement discretion and regulate certain LDTs as medical devices. To this end, on October 3, 2014, the FDA issued two draft guidance documents, entitled "Framework for Regulatory Oversight of Laboratory Developed Tests (LDTs)" and "FDA Notification and Medical Device Reporting for Laboratory Developed Tests (LDTs)", respectively, that set forth a proposed risk-based regulatory framework that would apply varying levels of FDA oversight to LDTs. The FDA has indicated that it does not intend to modify its policy of enforcement discretion until the draft guidance documents are finalized. In January 2017, the FDA announced that final guidance on the oversight of LDTs would allow for further public discussion. On January 13, 2017 the FDA issued a "Discussion Paper on Laboratory Developed Tests (LDTs)," which states that the material in the document does not represent a final version of the LDT draft guidance documents that were published in 2014 or position of the FDA; rather, the document is a method to encourage additional dialogue. The timing of when, if at all, the draft guidance documents will be finalized is unclear, and even then, the new regulatory requirements are proposed to be phased-in consistent with the schedule set forth in the guidance. Nevertheless, the FDA may decide to regulate certain LDTs on a case-by-case basis at any time. LDTs with the same intended use as a cleared or approved companion diagnostic are defined in FDA's draft guidance as "high-risk LDTs (Class III medical devices)" for which premarket review would be first to occur.

FDA review, if required and successfully accomplished, would be expected to have some advantages. Certain health insurance payers have paid higher amounts over LDT prices for FDA approved or cleared tests, recognizing the additional costs of bringing a test through regulatory review. Some payers also accept FDA approval or clearance as a presumptive evidence of an assay's analytic validity and clinical validity, which can reduce the barriers to coverage since the payer can focus its review on clinical utility.

The container we provide for collection and transport of blood samples from a health care provider to our clinical laboratory, as well as our BCTs, may be medical devices subject to the FDA regulation but are currently exempt from pre-market review by the FDA. While we believe that we are currently in material compliance with applicable laws and regulations, we cannot assure you that the FDA or other regulatory agencies would agree with our determination, and a determination that we have violated these laws, or a public announcement that we are being investigated for possible violations of these laws, could adversely affect our business, prospects, results of operations or financial condition.

Some of the materials we use for our current products, assays and services and may use in our planned future products, assays and services are labeled for RUO. In November 2013, the FDA finalized guidance regarding the sale and use of products labeled for research or investigational use only. Among other things, the guidance advises that the FDA continues to be concerned about distribution of research or investigational use only products intended for clinical diagnostic use and that the manufacturer's objective intent for the product's intended use will be determined by examining the totality of circumstances, including advertising, instructions for clinical interpretation, presentations that describe clinical use, and specialized technical support, surrounding the distribution of the product in question. The FDA has advised that if evidence demonstrates that a product is inappropriately labeled for research or investigational use only, the device would be misbranded and adulterated within the meaning of the Federal Food, Drug and Cosmetic Act. Some of the materials and reagents obtained by us from suppliers for use in our current products, assays and services and our planned future products, assays and services are currently labeled as research or investigational use only products. If the FDA were to undertake enforcement actions, some of our suppliers might cease selling research or investigational use products to us, and any failure to obtain an acceptable substitute could significantly and adversely affect our business, financial condition and results of operations, including increasing the cost of materials or reagents used in our current products, assays and services or planned future products, assays and services or delaying, limiting or prohibiting the purchase of materials or reagents necessary to sell our current products or planned future products or to perform our current assays or our planned future assays.

Our BCTs and Target Selector kits are marketed for RUO and distributed and sold to end users, some of which will be researchers and institutions while other end users could be labs performing clinical testing that will create their own LDTs. Some end users may assert that our ROU products caused their assays to perform inadequately or give erroneous results. If that was the case, we could potentially incur additional liabilities.

Further, HHS requested that its Advisory Committee on Genetics, Health and Society make recommendations about the oversight of genetic testing. A final report was published in April 2008. If the report's recommendations for increased oversight of genetic testing were to result in further regulatory burdens, they could negatively affect our business and delay the commercialization of assays in development.

Additionally, on March 16, 2018 CMS issued a final determination decision memo for Next-Generation Sequencing, or NGS, tests for Medicare Beneficiaries with Advanced Cancer (CAG-00450N). Under this final determination, NGS tests that gain FDA approval or clearance as a companion diagnostic will receive coverage, and the final determination of coverage for NGS tests that are LDTs will be left up to the local MAC. Currently, only 1 of our 15 CLIA validated assays is NGS-based; however, we plan to offer additional NGS assays in the future. To gain coverage for those assays, we will need to apply to Palmetto, which is the MAC that evaluates and recommends payment coverage or denial for molecular testing in our jurisdiction. Historically, Palmetto has offered a path to reimbursement by providing coverage while data is being gathered known as Coverage with Data Development, or CDD. Going forward, the extent to which CDD will be continued, if at all, or to the extent that a process will be available in its place, if any, are unclear.

The requirement of pre-market review could negatively affect our business until such review is completed and clearance to market or approval is obtained. The FDA could require that we stop selling our products or diagnostic assays pending pre-market clearance or approval. If the FDA allows our products or assays to remain on the market but there is uncertainty about our products or assays, if they are labeled investigational by the FDA or if labeling claims the FDA allows us to make are very limited, orders from laboratory supply distributors and physicians, or reimbursement from third-party payers, may decline. The regulatory approval process may involve, among other things, successfully completing additional clinical trials and making a 510(k) submission or filing a pre-market approval application with the FDA. If the FDA requires pre-market review, our products or assays may not be cleared or approved on a timely basis, if at all. We may also decide voluntarily to pursue FDA pre-market review of our products or assays if we determine that doing so would be appropriate.

If we were required to conduct additional clinical studies or trials before continuing to offer assays that we have developed or may develop as LDTs, those studies or trials could lead to delays or failure to obtain necessary regulatory approval, which could cause significant delays in commercializing any future products and harm our ability to achieve sustained profitability.

If the FDA decides to require that we obtain clearance or approvals to commercialize our current assays or our planned future assays, we may be required to conduct additional pre-market clinical testing before submitting a regulatory notification or application for commercial sales. In addition, as part of our long-term strategy we may plan to seek FDA clearance or approval, so we can sell our assays outside our CLIA laboratory; however, we would need to conduct additional clinical validation activities on our assays before

we can submit an application for FDA approval or clearance. Clinical trials must be conducted in compliance with FDA regulations or the FDA may take enforcement action or reject the data. The data collected from these clinical trials may ultimately be used to support market clearance or approval for our assays. It may take two years or more to conduct the clinical studies and trials necessary to obtain approval from the FDA to commercially launch our current assays and our planned future assays outside of our clinical laboratory. Even if our clinical trials are completed as planned, we cannot be certain that their results will support our assay claims or that the FDA or foreign authorities will agree with our conclusions regarding our assay results. Success in early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior clinical trials and studies. If we are required to conduct pre-market clinical trials, whether using prospectively acquired samples or archival samples, delays in the commencement or completion of clinical testing could significantly increase our assay development costs and delay commercialization. Many of the factors that may cause or lead to a delay in the commencement or completion of clinical trials may also ultimately lead to delay or denial of regulatory clearance or approval. The commencement of clinical trials may be delayed due to insufficient patient enrollment, which is a function of many factors, including the size of the patient population, the nature of the protocol, the proximity of patients to clinical sites and the eligibility criteria for the clinical trial. Moreover, the clinical trial process may fail to demonstrate that our current assays and our planned future assays are effective for the proposed indicated uses, which could cause us to abandon an assay candidate and may delay development of other assays.

We may find it necessary to engage contract research organizations to perform data collection and analysis and other aspects of our clinical trials, which might increase the cost and complexity of our trials. We may also depend on clinical investigators, medical institutions and contract research organizations to perform the trials properly. If these parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, or if the quality, completeness or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or for other reasons, our clinical trials may have to be extended, delayed or terminated. Many of these factors would be beyond our control. We may not be able to enter into replacement arrangements without undue delays or considerable expenditures. If there are delays in testing or approvals as a result of the failure to perform by third parties, our research and development costs would increase, and we may not be able to obtain regulatory clearance or approval for our current assays and our planned future assays. In addition, we may not be able to establish or maintain relationships with these parties on favorable terms, if at all. Each of these outcomes would harm our ability to market our assays or to achieve sustained profitability.

We are subject to federal and state healthcare fraud and abuse laws and regulations and could face substantial penalties if we are unable to fully comply with such laws.

We are subject to health care fraud and abuse regulation and enforcement by both the federal government and the states in which we conduct our business. These health care laws and regulations include, for example:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from soliciting, receiving, offering or providing remuneration, directly or indirectly, overtly or covertly, in cash or in kind, in return for or to induce either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or services for which payment may be made under a federal health care program such as the Medicare and Medicaid programs;
- the federal physician self-referral prohibition, commonly known as the Stark Law, which prohibits physicians from referring Medicare or Medicaid patients to providers of “designated health services” with whom the physician or a member of the physician’s immediate family has an ownership interest or compensation arrangement, unless a statutory or regulatory exception applies;
- the Eliminating Kickbacks in Recovery Act of 2018, or EKRA, which prohibits payments for referrals to recovery homes, clinical treatment facilities, and laboratories. EKRA’s reach extends beyond federal health care programs to include private insurance (i.e., it is an “all payer” statute);
- HIPAA, which established additional federal civil and criminal liability for, among other things, knowingly and willfully executing a scheme to defraud any health care benefit program or making false statements in connection with the delivery of or payment for health care benefits, items or services;
- HIPAA, as amended by HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information on “covered entities,” including certain healthcare providers, health plans, and healthcare clearinghouses, as well as their respective “business associates” that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, and their subcontractors that use, disclose or otherwise process individually identifiable health information;
- federal false claims and civil monetary penalties laws, which, prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, false or fraudulent claims for payment to the federal government;
- the federal Physician Payments Sunshine Act requirements under the ACA, which require certain manufacturers of drugs, devices, biologics and medical supplies to report to CMS information related to payments and other transfers of value made to or at the request of covered recipients, such as physicians, (defined to include doctors, dentists, optometrists, podiatrists and

chiropractors) and teaching hospitals, and certain physician ownership and investment interests held by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report information regarding its payments and other transfers of value to physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse anesthetists, anesthesiologist assistants, and certified nurse midwives during the previous year; and

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payer, including commercial insurers.

Further, the ACA, among other things, amended the intent requirement of the federal Anti-Kickback Statute and certain criminal health care fraud statutes. Where the intent requirement has been lowered, a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the government may now assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the false claims statutes. Any action brought against us for violation of these laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of these laws and regulations, we may be subject to any applicable penalty associated with the violation, including, among others, significant administrative, civil and criminal penalties, damages and fines, imprisonment, integrity oversight and reporting obligations, and exclusion from participation in government funded healthcare programs such as Medicare, Medicaid programs, including the California Medical Assistance Program (Medi-Cal-the California Medicaid program) or other state or federal health care programs. Additionally, we could be required to refund payments received by us, and we could be required to curtail or cease our operations. Any of the foregoing consequences could seriously harm our business and our financial results.

We are or may become subject to stringent and changing privacy laws, regulations and standards as well as policies, contracts and other obligations related to data privacy and security, including laws and regulations related to health information. We may expend significant resources to comply and any failure or perceived failure to comply with such obligations could result in enforcement or litigation (which could result in material criminal and civil penalties), a disruption of the development or delivery of our products and services, reputational harm or other adverse effects.

We collect, receive, store, process, use, generate, transfer, disclose, make accessible, protect and share personal data and other sensitive information, including but not limited to proprietary and confidential business information, trade secrets, intellectual property, health information and sensitive third-party information. Accordingly, we are, or may become, subject to numerous federal, state, local and international data privacy and security laws, regulations, guidance and industry standards, including laws that specifically regulate health information, as well as external and internal privacy and security policies, contracts and other obligations that apply to the processing of personal data by us and on our behalf.

For example, HIPAA, as amended by HITECH, and the respective implementing regulations, imposes limitations on the use and disclosure of an individual's healthcare information by certain healthcare providers, healthcare clearinghouses, and health insurance plans, collectively referred to as covered entities, and also grants individuals rights with respect to their health information. HIPAA also imposes compliance obligations and corresponding penalties for non-compliance on individuals and entities that provide services involving the creation, receipt, maintenance or transmission of individually identifiable health information for or on behalf of covered entities, collectively referred to as business associates as well as their covered subcontractors. HITECH also made significant increases in the penalties for improper use or disclosure of an individual's health information under HIPAA and extended enforcement authority to state attorneys general.

HHS has issued privacy regulations that regulate the use and disclosure of protected health information by covered entities engaging in certain electronic transactions or "standard transactions." They also set forth certain rights that an individual has with respect to his or her protected health information maintained by a covered entity, including the right to access or amend certain records containing protected health information or to request restrictions on the use or disclosure of protected health information. The HIPAA security regulations establish administrative, physical and technical standards for maintaining the confidentiality, integrity and availability of protected health information in electronic form. These standards apply to covered entities and also to "business associates" or third parties providing services to covered entities involving the use or disclosure of protected health information. The HIPAA privacy and security regulations establish a uniform federal "floor" and do not supersede state laws that are more stringent or provide individuals with greater rights with respect to the privacy or security of, and access to, their records containing protected health information. As a result, we may be required to comply with both HIPAA privacy regulations and varying state privacy and security laws.

Moreover, HITECH, among other things, established certain health information security breach notification requirements, which were later further modified by the Final Omnibus Rule. In the event of a breach of unsecured protected health information, a covered entity must notify each individual whose protected health information is breached, federal regulators and in some cases, must publicize the breach in local or national media. Certain breaches may be publicized by federal regulators who publicly identify the breaching entity, the circumstances of the breach and the number of individuals affected.

These laws contain significant fines and other penalties for wrongful use or disclosure of protected health information.

Additionally, states within the United States have enacted data breach notification laws, personal data privacy laws, and consumer protection privacy laws. For example, the California Consumer Privacy Act of 2018 ("CCPA") imposes several obligations on covered businesses, including requiring specific disclosures related to a business's collection, use and sharing of personal data, new operational practices, and requirements to respond to requests from California residents related to their personal data (e.g. requests to understand what personal data is collected, to delete the consumer's personal data, and to opt out of certain disclosures of personal data). The CCPA provides for significant civil penalties as well as a private right of action for data breaches and statutory damages, which are expected to increase data breach class action litigation and result in significant legal exposure. Although there are limited exemptions for clinical trial data and some other health data under the CCPA, we may be or may become subject to the CCPA and other similar laws, which could impact our business activities. In addition, it is anticipated that the California Privacy Rights Act of 2020 ("CPRA"), effective January 1, 2023, will expand the CCPA. The CPRA will, among other things, give California residents the ability to limit use of certain sensitive personal data, establish restrictions on the retention of personal data, expand the types of data breaches subject to the CCPA's private right of action, and establish a new California Privacy Protection Agency to implement and enforce the new law. In addition, other states have enacted or proposed data privacy laws, which could further complicate the legal landscape. For example, Virginia recently passed its Consumer Data Protection Act, and Colorado recently passed the Colorado Privacy Act, both of which differ from the CPRA and become effective in 2023.

The number and scope of obligations related to data privacy and security, including the complex requirements of HIPAA and HITECH, are rapidly evolving and are subject to changing and potentially in conflict with each other. As a result, preparing for and complying with these obligations requires significant resources and potentially significant changes to our technologies, systems and practices, as well as those of any third-party collaborators, service providers, contractors, consultants or other third parties that process personal data on our behalf, any of which could have a negative impact on our operations. Adding to the complexity is that our operations are evolving, and the requirements of these laws will apply differently depending on such things as whether or not we bill electronically for our services.

We may publish privacy policies and other documentation regarding our collection, processing, use and disclosure of personal data and/or other confidential information. Although we endeavor to comply with our published policies and other documentation, we may at times fail to do so or may be perceived to have failed to do so. Despite our efforts, we may not be successful in achieving compliance if our personnel, partners, or service providers fail to comply with our published policies and documentation. Such failures can subject us to potential foreign, local, state and federal action if they are found to be deceptive, unfair, or misrepresentative of our actual practices.

Although we endeavor to comply with our published policies, other documentation, and all applicable privacy and security laws, regulations and guidance, we may at times fail to do so or may be perceived to have failed to do so. Moreover, despite our efforts, we may not be successful in achieving compliance if our employees, third-party collaborators, service providers, contractors or consultants fail to comply with our published policies and documentation. If we fail, or are perceived to have failed, to address or comply with obligations related to data privacy and security, we could face government enforcement actions that could include investigations, fines, penalties, audits and inspections; additional reporting requirements and/or oversight; temporary or permanent bans on all or some processing of personal data; and orders to destroy or not use personal data. Individuals or other relevant stakeholders could file claims against us for our actual or perceived failure to comply with our data privacy and security obligations, including, without limitation, in class action litigation. Any of these events could have a material adverse effect on our reputation, business, or financial condition, and could lead to a loss of actual or prospective customers, collaborators or partners; interrupt or stop clinical trials; result in an inability to process personal data or to operate in certain jurisdictions; limit our ability to develop or commercialize our products; or require us to revise or restructure our operations. Moreover, such claims, even if we are not found liable, could be expensive and time-consuming to defend and could result in diversion of management's attention and adverse publicity that could harm our business or have other material adverse effects.

Clinical research is heavily regulated and failure to comply with human subject protection regulations may disrupt our research program leading to significant expense, regulatory enforcement, private lawsuits and reputational damage.

Clinical research is subject to federal, state and, for studies conducted outside of the United States, international regulation. At the federal level, the FDA imposes regulations for the protection of human subjects and requirements such as initial and ongoing institutional review board review; informed consent requirements, adverse event reporting and other protections to minimize the risk and maximize the benefit to research participants. Many states impose human subject protection laws that mirror or in some cases exceed federal requirements. HIPAA also regulates the use and disclosure of protected health information in connection with research activities. Research conducted overseas is subject to a variety of national protections such as mandatory ethics committee review, as well as laws regulating the use, disclosure and cross-border transfer of personal data. For example, if we obtain certain personal information regarding residents in the European Union, we may be subject to the European Union General Data Protection Regulation. The costs of compliance with these laws may be significant and compliance with regulatory requirements may result in delay.

Noncompliance may disrupt our research and result in data that is unacceptable to regulatory authorities, data lock or other sanctions that may significantly disrupt our operations.

Violation of a state's prohibition on the corporate practice of medicine could result in a material adverse effect on our business.

A number of states, including California, do not allow business corporations to employ physicians to provide professional services. This prohibition against the "corporate practice of medicine" is aimed at preventing corporations such as us from exercising control over the medical judgments or decisions of physicians. The state licensure statutes and regulations and agency and court decisions that enumerate the specific corporate practice rules vary considerably from state to state and are enforced by both the courts and regulatory authorities, each with broad discretion. If regulatory authorities or other parties in any jurisdiction successfully assert that we are engaged in the unauthorized corporate practice of medicine, we could be required to restructure our contractual and other arrangements. In addition, violation of these laws may result in significant civil, criminal and administrative penalties imposed against us and/or the professional through licensure proceedings, and exclusion from state and federal health care programs.

Intellectual Property Risks Related to Our Business

If we are unable to obtain and maintain effective patent rights for our products or services, we may not be able to compete effectively in our markets.

We rely upon a combination of patents, trade secret protection, and confidentiality agreements to protect the intellectual property related to our technologies, products and services. Our success depends in large part on our ability to obtain and maintain patent and other intellectual property protection in the United States and in other countries with respect to our proprietary technology and products.

We have sought to protect our proprietary position by filing patent applications in the United States and abroad related to our novel technologies and products that are important to our business. This process is expensive and time consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. The possibility exists that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection.

The patent position of diagnostic companies generally is highly uncertain and involves complex legal and factual questions for which legal principles remain unsolved. The patent applications that we own, or in-license, may fail to result in issued patents with claims that cover our products or services in the United States or in other foreign countries. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. Even if patents do successfully issue, and even if such patents cover our products and services, third parties may challenge their validity, enforceability, or scope, which may result in such patents being narrowed, found unenforceable or invalidated. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our products and services, or prevent others from designing around our claims. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

We, independently or together with our licensors, have filed several patent applications covering various aspects of our products and services. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by or licensed to us after patent issuance could deprive us of rights necessary for the successful commercialization of any products and services that we may offer. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product or service under patent protection could be reduced.

Patent policy and rule changes could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. The laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. We therefore cannot be certain that we or our licensors were the first to make the invention claimed in our owned and licensed patents or pending applications, or that we or our licensor were the first to file for patent protection of such inventions. Assuming the other requirements for patentability are met, in the United States prior to March 15, 2013, the first to make the claimed invention is entitled to the patent, while outside the United States, the first to file a patent application is entitled to the patent. After March 15, 2013, under the Leahy-Smith America Invents Act, or the Leahy-Smith Act, enacted on September 16, 2011, the United States has moved to a first to file system. The Leahy-Smith Act also includes a number of significant changes that affect the way patent applications will be prosecuted and may also affect patent litigation. The effects of these changes are currently unclear as the

United States Patent and Trademark Office, or USPTO, must still implement various regulations, the courts have yet to address any of these provisions and the applicability of the act and new regulations on specific patents discussed herein have not been determined and would need to be reviewed. In general, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

If we are unable to maintain effective proprietary rights for our products or services, we may not be able to compete effectively in our markets.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our products and services that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors, and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors.

Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors, and any third parties who have access to our proprietary know-how, information, or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret.

****Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.***

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There have been many lawsuits and other proceedings involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, and reexamination proceedings before the USPTO and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing products and services. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our products and services may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture, or methods for treatment related to the use or manufacture of our products and services. We have conducted freedom to operate analyses with respect to only certain of our products and services, and therefore we do not know whether there are any third-party patents that would impair our ability to commercialize these products and services. We also cannot guarantee that any of our analyses are complete and thorough, nor can we be sure that we have identified each and every patent and pending application in the United States and abroad that is relevant or necessary to the commercialization of our products and services. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our products or services may infringe.

For example, in August 2016, we received a letter from MolecularMD Corp. offering a license to two U.S. Patents owned by the Memorial Sloan-Kettering Cancer Center, and licensed to MolecularMD Corp., that are relevant to one of the biomarkers we detect in our Liquid Biopsy Non-Small Cell Lung Cancer Profile Target-Selector™ assay and our Liquid Biopsy Lung Cancer Resistance Profile Target-Selector™ assay. One of the two patents is expected to expire in 2026. The other patent is expected to expire in 2028. Although we believe that the claims of both patents relevant to our assays would likely be held invalid, we cannot provide any assurances that a court or an administrative agency would agree with our assessment. If the validity of the relevant claims in question is upheld upon a validity challenge, then we may be liable for past damages and would need a license in order to continue commercializing our Liquid Biopsy Non-Small Cell Lung Cancer Profile Target-Selector™ Assay and our Liquid Biopsy Lung Cancer Resistance Profile Target-Selector™ Assay in the United States. However, such a license may not be available on commercially reasonable terms or at all, which could materially and adversely affect our business.

In addition, we are aware of a U.S. Patent owned by Amgen, Inc. that is relevant to one of the biomarkers we detect in our Liquid Biopsy Non-Small Cell Lung Cancer Profile Target-Selector™ assay and our Liquid Biopsy Lung Cancer Resistance Profile Target-Selector™ assay. The patent is expected to expire in 2028. Although we believe that the claims of the patent relevant to our assays

would likely be held invalid, we cannot provide any assurances that a court or an administrative agency would agree with our assessment. If the validity of the relevant claims in question is upheld upon a validity challenge, then we may be liable for past damages and would need a license in order to continue commercializing our Liquid Biopsy Non-Small Cell Lung Cancer Profile Target-Selector™ assay and our Liquid Biopsy Lung Cancer Resistance Profile Target-Selector™ assay in the United States. However, such a license may not be available on commercially reasonable terms or at all, which could materially and adversely affect our business.

We are also aware of a U.S. Patent owned by Genentech, Inc. that is relevant to one of the biomarkers we detect in our Liquid Biopsy Lung Cancer Resistance Profile Target-Selector™ assay and our Liquid Biopsy Colon Cancer Profile Target-Selector™ assay. The patent is expected to expire in 2025. Although we believe that the claims of the patent relevant to our assays would likely be held invalid, we cannot provide any assurances that a court or an administrative agency would agree with our assessment. If the validity of the relevant claims in question is upheld upon a validity challenge, then we may be liable for past damages and would need a license in order to continue commercializing our Liquid Biopsy Lung Cancer Resistance Profile Target-Selector™ assay and our Liquid Biopsy Colon Cancer Profile Target-Selector™ assay in the United States. However, such a license may not be available on commercially reasonable terms or at all, which could materially and adversely affect our business.

In addition, in July 2016, we received a communication from the Mayo Foundation for Medical Education and Research ("Mayo") offering a license to a U.S. Patent owned by Mayo that is relevant to an antibody that we use in our Liquid Biopsy Immuno-Oncology PD-L1 assay. The patent is expected to expire in 2021. At present, we believe that we will need a license to this patent to continue commercializing our Liquid Biopsy Immuno-Oncology PD-L1 assay. We are currently in discussions with Mayo and believe a license can be obtained on commercially reasonable terms. However, if we are unable to secure such a license, we may be liable for past damages, and our business could be materially and adversely affected.

In addition, in December 2020, we received a communication from counsel for RavGen, Inc., or RavGen, offering to discuss licensing terms for certain patents owned by RavGen, which RavGen's communication alleged are relevant to Biocept's Target Selector™ Liquid Biopsy test kits and panels. If we are unable to secure a license on commercially reasonable terms, and if RavGen subsequently files suit and a court or jury makes a determination that our test kits and panels infringe any valid RavGen patent claims, then we may be liable for damages, and our business could be materially and adversely affected. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover aspects of our products or services, the holders of any such patents may be able to block our ability to commercialize such products or services unless we obtained a license under the applicable patents, or until such patents expire or are finally determined to be invalid or unenforceable. Such a license may not be available on commercially reasonable terms or at all.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our products or services. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

We may not be successful in obtaining or maintaining necessary rights to our products or services through acquisitions and in-licenses.

We currently have rights to the intellectual property, through licenses from third parties and under patents that we own, to develop our products and services. Because our programs may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license, or use these proprietary rights. We may be unable to acquire or in-license any compositions, methods of use, processes, or other third-party intellectual property rights from third parties that we identify as necessary for our products or services. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources, and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment.

We sometimes collaborate with U.S. and foreign institutions to accelerate our research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such option, we may be unable to negotiate a license within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program.

If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of that program and our business and financial condition could suffer.

Although we are not currently involved in any litigation, we may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time consuming, and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. Although we are not currently involved in any litigation, if we or one of our licensing partners were to initiate legal proceedings against a third-party to enforce a patent covering one of our products or services, the defendant could counterclaim that the patent covering our product or service is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability is unpredictable.

Interference proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise sufficient capital to continue our research programs, license necessary technology from third parties, or enter into development partnerships that would help commercialize our products or services.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

We may be subject to claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We employ certain individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, and independent contractors do not use the proprietary information or know-how of others in their work for us, and we are not currently subject to any claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties, we may in the future be subject to such claims. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

Although we are not currently experiencing any claims challenging the inventorship of our patents or ownership of our intellectual property, we may in the future be subject to claims that former employees, collaborators or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our products or services. Litigation may be necessary to defend against these and other claims challenging inventorship. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involves both technological and legal complexity. Therefore, obtaining and enforcing biotechnology patents is costly, time consuming, and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition

to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, and defending patents on products and services in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and may also export infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Our collaborators may assert ownership or commercial rights to inventions we develop from our use of the biological materials which they provide to us, or otherwise arising from the collaboration.

We collaborate with several institutions, physicians and researchers in scientific matters. We do not have written agreements with certain of such collaborators, or the written agreements we have do not cover intellectual property rights. Also, we rely on numerous third parties to provide us with blood samples and biological materials that we use to develop assays. If we cannot successfully negotiate sufficient ownership and commercial rights to any inventions that result from our use of a third-party collaborator's materials, or if disputes arise with respect to the intellectual property developed with the use of a collaborator's samples, or data developed in a collaborator's study, we may be limited in our ability to capitalize on the market potential of these inventions or developments.

Risks Relating to Our Common Stock

The price of our common stock may be volatile.

Market prices for our common stock have historically been volatile. The factors that may cause the market price of our common stock to fluctuate include, but are not limited to:

- progress, or lack of progress, in performing, developing and commercializing our current assays and our planned future assays;
- favorable or unfavorable decisions about our assays from government regulators, insurance companies or other third-party payers;
- our ability to recruit and retain qualified research and development personnel;
- changes in investors' and securities analysts' perception of the business risks and conditions of our business;
- changes in our relationship with key collaborators;
- changes in the market valuation or earnings of our competitors or companies viewed as similar to us;
- changes in key personnel;
- depth of the trading market in our common stock;
- changes in our capital structure, such as future issuances of securities or the incurrence of additional debt;

- disruptions caused by man-made or natural disasters or public health pandemics or epidemics or other business interruptions, including, for example, the COVID-19 pandemic;
- changes in the structure of healthcare payment systems;
- the granting or exercise of employee stock options or other equity awards;
- realization of any of the risks described herein; and
- general market and economic conditions.

In addition, the equity markets have experienced significant price and volume fluctuations that have affected the market prices for the securities of public companies for a number of reasons, including reasons that may be unrelated to our business or operating performance. These broad market fluctuations may result in a material decline in the market price of our common stock and you may not be able to sell your shares at prices you deem acceptable. In the past, following periods of volatility in the equity markets, securities class action lawsuits have been instituted against public companies. Such litigation, if instituted against us, could result in substantial cost and the diversion of management attention.

Our failure to meet the continued listing requirements of The Nasdaq Capital Market could result in a de-listing of our common stock.

If we fail to satisfy the continued listing requirements of The Nasdaq Capital Market, such as the corporate governance requirements, the minimum closing bid price requirement, or the minimum stockholders' equity requirement, Nasdaq may take steps to de-list our common stock. For example, in May 2016, we received a letter from Nasdaq indicating that we are not in compliance with the minimum stockholders' equity requirement of Nasdaq Listing Rule 5550(b)(1), and in each of June 2016, November 2016, January 2018 and September 2019, we received letters from Nasdaq indicating that we were not in compliance with the minimum bid price requirement of Nasdaq Listing Rule 5550(a)(2), which requires that companies listed on The Nasdaq Capital Market maintain a minimum closing bid price of at least $1.00 per share. Although we were able to regain compliance with the Nasdaq continued listing requirements discussed in the May 2016, June 2016, November 2016, January 2018 and September 2019 letter, there can be no assurance that we will be able to maintain compliance with the continued listing requirements of the Nasdaq Capital Market. If we fail to maintain compliance with Nasdaq's continued listing requirements, Nasdaq may take steps to de-list our common stock. Such a de-listing would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a de-listing, we would take actions to restore our compliance with Nasdaq's listing requirements, but we can provide no assurance that any such action taken by us would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, or prevent future non-compliance with Nasdaq's listing requirements.

Our quarterly operating results may fluctuate significantly.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- the rate of adoption and/or continued use of our current assays and our planned future assays by healthcare practitioners;
- variations in the level of expenses related to our development programs;
- addition or reduction of resources for sales and marketing;
- addition or termination of clinical utility studies;
- any intellectual property infringement lawsuit in which we may become involved;
- the impact of the ongoing COVID-19 pandemic on our core oncology business;
- the impact of a COVID-19 vaccine on our ability to generate revenues from our RT-PCR COVID-19 testing business;
- third-party payer coverage and reimbursement determinations affecting our assays; and
- regulatory developments affecting our assays.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially.

Future sales of our common stock or other securities, or the perception that future sales may occur, may cause the market price of our common stock to decline, even if our business is doing well.

Sales of substantial amounts of our common stock or other securities, or the perception that these sales may occur, could materially and adversely affect the price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. For example, in May 2020, the SEC declared effective a shelf registration statement filed by us. This shelf registration statement allows us to issue any combination of our common stock, preferred stock, debt securities and warrants from time to time for an aggregate initial offering price of up to $100 million. In May 2021, we entered into a Controlled Equity Offering℠ Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co. (the "Sales Agent"), under which we may issue and sell from time to time up to $25,000,000 of our common stock through or to the Sales Agent, as sales agent or principal. Any sale of shares of our common stock under the Sales Agreement will be made under our shelf registration statement on Form S-3. Sales of our common stock under the Sales Agreement are made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act of 1933, as amended. As of June 30, 2021, $21.1 million of our common stock remained available for sale under the Sales Agreement. Depending on a variety of factors, including market liquidity of our common stock, the sale of shares under this shelf registration statement may cause the trading price of our common stock to decline. The sale of a substantial number of shares of our common stock under this shelf registration statement, or anticipation of such sales, could cause the trading price of our common stock to decline or make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise desire.

We had outstanding 14,722,958 shares of common stock as of August 12, 2021, most of which are not subject to resale restrictions under Rule 144 of the Securities Act. In addition, as of August 12, 2021, we had outstanding preferred stock convertible into 46,651 shares of our common stock, options to purchase 1,400,031 shares of our common stock, 36 shares of common stock were issuable upon the settlement of outstanding restricted stock units, or RSUs, and 987,986 shares of our common stock were issuable upon the exercise of outstanding warrants. Shares issued upon the exercise of stock options or upon the settlement of outstanding RSUs generally will be eligible for sale in the public market, except that affiliates will continue to be subject to volume limitations and other requirements of Rule 144 under the Securities Act. The issuance or sale of such shares could depress the market price of our common stock.

In the future, we also may issue our securities if we need to raise additional capital. The number of new shares of our common stock issued in connection with raising additional capital could constitute a material portion of the then-outstanding shares of our common stock.

If we are unable to favorably assess the effectiveness of our internal control over financial reporting, investors may lose confidence in our financial reporting and our stock price could be materially adversely affected.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404(a) of the Sarbanes-Oxley Act, or the subsequent testing by our independent registered public accounting firm conducted in connection with Section 404(b) of the Sarbanes-Oxley Act after we no longer qualify as a "non-accelerated filer," with less than $100 million in annual revenues, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

We are required to disclose changes made in our internal control procedures on a quarterly basis and our management is required to assess the effectiveness of these controls annually. However, for as long as we are a "smaller reporting company" with less than $100 million in annual revenues, our independent registered public accounting firm will not be required to attest to the effectiveness of our internal control over financial reporting pursuant to Section 404. An independent assessment of the effectiveness of our internal controls could detect problems that our management's assessment might not. Undetected material weaknesses in our internal controls could lead to financial statement restatements and require us to incur the expense of remediation.

Anti-takeover provisions of our certificate of incorporation, our bylaws and Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove the current members of our board and management.

Certain provisions of our amended certificate of incorporation and amended and restated bylaws could discourage, delay or prevent a merger, acquisition or other change of control that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. Furthermore, these provisions could prevent or frustrate attempts by our stockholders to replace or remove members of our Board of Directors. For example, Delaware law provides that if a corporation has a classified board of directors, stockholders cannot remove any director during his or her term without cause. These provisions also could limit the price that investors might be willing to pay in the future for our common stock, thereby depressing the market price of our common stock.

Stockholders who wish to participate in these transactions may not have the opportunity to do so. These provisions, among other things:

- classify our Board of Directors into three classes of equal (or roughly equal) size, with all directors serving for a three-year term and the directors of only one class being elected at each annual meeting of stockholders, so that the terms of the classes of directors are "staggered";
- allow the authorized number of directors to be changed only by resolution of our Board of Directors;
- authorize our Board of Directors to issue, without stockholder approval, preferred stock, the rights of which will be determined at the discretion of the Board of Directors and that, if issued, could operate as a "poison pill" to dilute the stock ownership of a potential hostile acquirer to prevent an acquisition that our Board of Directors does not approve;
- establish advance notice requirements for stockholder nominations to our Board of Directors or for stockholder proposals that can be acted on at stockholder meetings; and
- limit who may call a stockholders meeting.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, or DGCL, which may, unless certain criteria are met, prohibit large stockholders, in particular those owning 15% or more of the voting rights on our common stock, from merging or combining with us for a prescribed period of time.

Because we do not expect to pay cash dividends for the foreseeable future, you must rely on appreciation of our common stock price for any return on your investment. Even if we change that policy, we may be restricted from paying dividends on our common stock.

We do not intend to pay cash dividends on shares of our common stock for the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our Board of Directors and will depend upon results of operations, financial performance, contractual restrictions, restrictions imposed by applicable law and other factors our Board of Directors deems relevant. Accordingly, you will have to rely on capital appreciation, if any, to earn a return on your investment in our common stock. Investors seeking cash dividends in the foreseeable future should not purchase our common stock.

Changes in tax laws or regulations that are applied adversely to us or our customers may have a material adverse effect on our business, cash flow, financial condition or results of operations.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could adversely affect our business operations and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, the Tax Cuts and Jobs Act enacted many significant changes to the U.S. tax laws. Future guidance from the Internal Revenue Service and other tax authorities with respect to the Tax Cuts and Jobs Act may affect us, and certain aspects of the Tax Cuts and Jobs Act could be repealed or modified in future legislation. For example, the CARES Act modified certain provisions of the Tax Cuts and Jobs Act. In addition, it is uncertain if and to what extent various states will conform to the Tax Cuts and Jobs Act, the CARES Act or any newly enacted federal tax legislation. Changes in corporate tax rates, the realization of net deferred tax assets relating to our operations, the taxation of foreign earnings, and the deductibility of expenses under the Tax Cuts and Jobs Act or future reform legislation could have a material impact on the value of our deferred tax assets, could result in significant one-time charges, and could increase our future U.S. tax expense.

Our effective tax rate may fluctuate, and we may incur obligations in tax jurisdictions in excess of accrued amounts.

We are subject to taxation in numerous U.S. states and territories. As a result, our effective tax rate is derived from a combination of applicable tax rates in the various places that we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each of such places. Nevertheless, our effective tax rate may be different than experienced in the past due to numerous factors, including the results of examinations and audits of our tax filings, our inability to secure or sustain acceptable agreements with tax authorities, changes in accounting for income taxes and changes in tax laws. Any of these factors could cause us to experience an effective tax rate significantly different from previous periods or our current expectations and may result in tax obligations in excess of amounts accrued in our financial statements.

Our ability to use our estimated net operating loss carryforwards and certain other tax attributes may be limited.

Under the Tax Cuts and Jobs Act as modified by the CARES Act, federal net operating losses incurred in tax years beginning after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal net operating losses in tax years beginning after December 31, 2020, is limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to the Tax Cuts and Jobs Act or the CARES Act. In addition, under Sections 382 and 383 of the Code, if a corporation undergoes an "ownership change," generally defined as a cumulative change in its equity ownership by "5-percent shareholders" of

greater than 50 percentage points (by value) over a three-year period, the corporation's ability to use its estimated pre-change net operating loss carryforwards and certain other tax attributes (such as research tax credits) to offset its post-change taxable income and taxes, as applicable, may be limited. As of December 31, 2020, we had estimated federal and state net operating loss carryforwards of approximately $75.4 million and $44.2 million, respectively, and estimated federal and California research and development tax credits of approximately $577,000 and $3.9 million, respectively, which could be limited if we have experienced or do experience any "ownership changes." We have not completed a study to assess whether an ownership change has occurred or whether there have been multiple ownership changes since our formation, due to the complexity and cost associated with such a study, and the fact that there may be additional ownership changes in the future. We believe, however, that multiple ownership changes likely occurred. In addition, at the state level, there may be periods during which the use of net operating loss carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California imposed limits on the usability of California state net operating losses and certain state tax credits in tax years beginning after 2019 and before 2023. We have estimated that the use of our net operating loss is limited and the amounts above remain fully offset by a valuation allowance.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because early-stage life sciences companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

General Risk Factors

We have incurred and will continue to incur significant costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.

As a public company, we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, the listing requirements of The Nasdaq Stock Market and other applicable securities rules and regulations. Compliance with these rules and regulations includes significant legal and financial compliance costs, makes some activities more difficult, time-consuming or costly, and increases demand on our systems and resources. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could harm our business and operating results. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

If securities or industry analysts issue an adverse opinion regarding our stock or do not publish research or reports about our company, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that equity research analysts publish about us, our business and our competitors. We do not control these analysts or the content and opinions or financial models included in their reports. Securities analysts may elect not to provide research coverage of our company, and such lack of research coverage may adversely affect the market price of our common stock. The price of our common stock could also decline if one or more equity research analysts downgrade our common stock or if those analysts issue other unfavorable commentary or cease publishing reports about us or our business. If one or more equity research analysts cease coverage of our company, we could lose visibility in the market, which in turn could cause our stock price to decline.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Unregistered Sales of Equity Securities

None.

Use of Proceeds

Not applicable.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

The exhibits listed below are hereby filed with the SEC as part of this Quarterly Report on Form 10-Q.

Exhibit No.	Description of Exhibit
3.1	Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1.4 of the Registrant's Current Report on Form 8-K, filed with the SEC on February 14, 2014).
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-191323), filed with the SEC on September 23, 2013).
3.3	Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 29, 2016).
3.4	Amendment to Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 29, 2017).
3.5	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on July 6, 2018).
3.6	Certificate of Designation of Preference, Rights and Limitations of Series A Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on August 13, 2018).
3.7	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 4, 2020).
4.1	Reference is made to Exhibits 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.7.
4.2	Specimen Common Stock certificate of Biocept, Inc. (incorporated by reference to Exhibit 4.2 of the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on November 16, 2020).
4.3	Form of Warrant issued to the lenders under the Loan and Security Agreement, dated as of April 30, 2014, by and among Biocept, Inc., Oxford Finance LLC, as collateral agent, and the lenders party thereto from time to time, including Oxford Finance LLC (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on May 6, 2014).
4.4	Form of Warrant to Purchase Common Stock (incorporated by reference to Exhibit 4.5 of the Registrant's Registration Statement on Form S-1 (File No. 333-201437), as amended, filed with the SEC on February 6, 2015).
4.5	Form of Common Stock Purchase Warrant issued to the investors under the Securities Purchase Agreement, dated April 29, 2016, by and among Biocept, Inc. and the purchasers signatory thereto (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on April 29, 2016).
4.6	Form of Warrant to Purchase Common Stock (incorporated by reference to Exhibit 4.16 of the Registrant's Post-Effective Amendment to Registration Statement on Form S-1 (File No. 333-213111), filed with the SEC on October 14, 2016).
4.7	Form of Common Stock Purchase Warrant issued to the investors under the Securities Purchase Agreement, dated March 28, 2017, by and among Biocept, Inc. and the purchasers signatory thereto (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on March 30, 2017).
4.8	Common Stock Purchase Warrant issued by the Registrant in favor of Ally Bridge LB Healthcare Master Fund Limited under the Common Stock and Warrant Purchase Agreement dated August 9, 2017 (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on August 10, 2017).
4.9	Common Stock Purchase Warrant issued in favor of Dawson James Securities, Inc. under the Securities Purchase Agreement dated December 5, 2017 (incorporated by reference to Exhibit 4.18 of the Registrant's Registration Statement on Form S-1 (File No. 333-221648), as amended, filed with the SEC on January 22, 2018).
4.10	Form of Warrant to Purchase Common Stock issued to the investors under the Securities Purchase Agreement, dated January 26, 2018 (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on January 30, 2018).
4.11	Warrant Agency Agreement dated August 13, 2018 by and between the Registrant and Continental Stock Transfer & Trust Company (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on August 13, 2018).
4.12	Form of Series A Common Stock Purchase Warrant (incorporated by reference to Exhibit 3.6 of the Registrant's Registration Statement on Form S-1 (File No. 333-225147), as amended, filed with the SEC on July 11, 2018).
4.13	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 24, 2018).
4.14	Form of Series A Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.2 of the Registrant's Current Report on Form 8-K, filed with the SEC on September 24, 2018).

Exhibit No.	Description of Exhibit
4.15	Form of Series B Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.24 of the Registrant's Registration Statement on Form S-1 (File No. 333-228566), filed with the SEC on November 28, 2018).
4.16	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.25 of the Registrant's Registration Statement on Form S-1 (File No. 333-228566), filed with the SEC on November 28, 2018).
4.17	Form of Series B Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on March 18, 2019).
4.18	Form of Series C Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on May 29, 2019).
4.19	Form of Common Stock Warrant (incorporated by reference to Exhibit 4.19 of the Registrant's Registration Statement on Form S-1 (File No. 333-234459), as amended, filed with the SEC on December 6, 2019).
4.20	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.20 of the Registrant's Registration Statement on Form S-1 (File No. 333-234459), as amended, filed with the SEC on November 8, 2019).
4.21	Form of Common Stock Warrant (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on December 11, 2019).
4.22	Form of Warrant Amendment (incorporated by reference to Exhibit 4.1 of the Registrant's Current Report on Form 8-K, filed with the SEC on January 9, 2020).
4.23	Form of Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.2 of the Registrant's Current Report on Form 8-K, filed with the SEC on January 9, 2020).
10.1	Controlled Equity Offering℠ Sales Agreement, dated May 12, 2021, by and between Biocept, Inc. and Cantor Fitzgerald & Co. (incorporated by reference to Exhibit 1.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on May 12, 2021).
10.2+	Amended and Restated 2013, Equity Incentive Plan, as amended.
31.1	Certification of Michael Nall, Chief Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Timothy Kennedy, Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Michael Nall, Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Timothy Kennedy, Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

+ Indicates management contract or compensatory plan.

* This certification is not deemed "filed" for purposes of Section 18 of the Securities Exchange Act, or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the registrant specifically incorporates it by reference.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

BIOCEPT, INC.
(Registrant)

Date: August 16, 2021

By: /s/ Michael W. Nall
Michael W. Nall
President, Chief Executive Officer and Director
(Principal Executive Officer)

Date: August 16, 2021

By: /s/ Timothy C. Kennedy
Timothy C. Kennedy
Chief Financial Officer, Senior Vice President of Operations
(Principal Financial and Accounting Officer)

EXHIBIT 10.2

BIOCEPT, INC. AMENDED AND RESTATED 2013 EQUITY INCENTIVE PLAN

Adopted by the Board of Directors: July 31, 2013
Approved by the Stockholders: August 6, 2013
Amended and Restated by the Board of Directors: April 28, 2015
Approved by the Stockholders: June 16, 2015
Amended by the Board: July 25, 2016
Amended by the Board: March 27, 2017
Approved by the Stockholders: May 2, 2017
Amended by the Board: May 7, 2018
Approved by the Stockholders: June 28, 2018
Amended by the Board: March 25, 2019
Approved by the Stockholders; June 17, 2019
Amended by the Board: March 30, 2020
Approved by the Stockholders: June 5, 2020
Amended by the Board: April 28, 2021
Approved by the Stockholders: July 16, 2021

1. GENERAL.

1.1 **Plan History**. The name of this plan is the Biocept, Inc. 2013 Equity Incentive Plan, as it may be amended from time to time (the "***Plan***"). The Plan was originally adopted by the Board and stockholders of the Company on July 31, 2013 and August 6, 2013, respectively. The Plan was amended and restated effective June 16, 2015, the date the amendment and restatement of the Plan was approved by the Company's stockholders at the Company's 2015 Annual Meeting (the "***Initial Amendment and Restatement Effective Date***"). The Plan was further amended and restated effective May 2, 2017, the date the amendment and restatement of the Plan was approved by the Company's stockholders at the Company's 2017 Annual Meeting. The Plan was further amended and restated effective June 28, 2018, the date the amendment and restatement of the Plan was approved by the Company's stockholders at the Company's 2018 Annual Meeting. The Plan was further amended and restated effective June 17, 2019, the date the amendment and restatement of the Plan was approved by the Company's stockholders at the Company's 2019 Annual Meeting. The Plan was further amended and restated effective June 5, 2020, the date the amendment and restatement of the Plan was approved by the Company's stockholders at the Company's 2020 Annual Meeting. The Plan was further amended and restated effective April 28, 2021 by the Company's Board of Directors, contingent on approval by the Company's stockholders at the Company's 2021 Annual Meeting on June 11, 2020 (the "***Amendment and Restatement Effective Date***"). As of the Initial Amendment and Restatement Effective Date, the Plan became the successor to and continuation of the Biocept, Inc. 2007 Equity Incentive Plan (the "***2007 Plan***"). From and after the Initial Amendment and Restatement Effective Date, no additional stock awards will be granted under the 2007 Plan, however outstanding stock awards granted under the 2007 Plan will remain subject to the terms of the 2007 Plan. Any shares of Common Stock that would otherwise remain available for future grants of stock awards under the 2007 Plan as of the Initial Amendment and Restatement Effective Date (the "***2007 Plan Available Reserve***") will cease to be available under the 2007 Plan at such time and will be added to the Share Reserve (as further described in Section 4.1 below) and be immediately available for grants and issuance pursuant to Awards hereunder. In addition, from and after the Initial Amendment and Restatement Effective Date, any shares subject, at such time, to outstanding stock awards that were granted under the 2007 Plan (the "***2007 Plan Awards***") will be added to the Share Reserve at such time and to the extent described in Section 4.1 and 4.3 below.

1.2 **General Purpose**. The purposes of the Plan are to (a) enable the Company to attract and retain the types of Employees, Consultants and Directors who will contribute to the Company's long range success; (b) provide incentives that align the interests of Employees, Consultants and Directors with those of the stockholders of the Company; (c) promote the success of the Company's business; and (d) with respect to Inducement

Awards, provide an inducement material for certain individuals to enter into employment with the Company within the meaning of Rule 5635(c)(4) of the Nasdaq Listing Rules.

1.3 **Eligible Award Recipients**. The persons eligible to receive Awards are the Employees, Consultants and Directors. Notwithstanding the foregoing, the only persons eligible to receive grants of Inducement Awards under this Plan are individuals who satisfy the standards for inducement grants under Nasdaq Marketplace Rule 5635(c)(4) and the related guidance under Nasdaq IM 5635-1. A person who previously served as an Employee or Director will not be eligible to receive Inducement Awards under the Plan, other than following a bona fide period of non-employment.

1.4 **Available Awards**. Awards that may be granted under the Plan include: (a) Incentive Stock Options, (b) Non-qualified Stock Options, (c) Stock Appreciation Rights, (d) Restricted Awards and (e) Performance Compensation Awards. Notwithstanding the foregoing, Inducement Awards that may be granted under the Plan may include: (i) Non-qualified Stock Options, (ii) Stock Appreciation Rights, and (iii) Restricted Awards.

2. **Definitions**.

"***2007 Plan Available Reserve***" means the shares of Common Stock that remain available for future grants of stock awards under the 2007 Plan as of the Initial Amendment and Restatement Effective Date.

"***2007 Plan Award***" means a stock award that was granted under the 2007 Plan and that is outstanding as of the Initial Amendment and Restatement Effective Date.

"***Affiliate***" means a corporation or other entity that, directly or through one or more intermediaries, controls, is controlled by or is under common control with, the Company.

"***Amendment and Restatement Effective Date***" means June 11, 2021, the date the amendments and restatements to the Plan of April 28, 2021 are subject to approval by the Company's stockholders at the Company's 2018 Annual Meeting.

"***Applicable Laws***" means the requirements related to or implicated by the administration of the Plan under applicable state corporate law, United States federal and state securities laws, the Code, any securities exchange or quotation system on which the shares of Common Stock are listed or quoted, and the applicable laws of any foreign country or jurisdiction where Awards are granted under the Plan.

"***Award***" means any right granted under the Plan, including an Incentive Stock Option, a Non-qualified Stock Option, a Stock Appreciation Right, a Restricted Award, or a Performance Compensation Award.

"***Award Agreement***" means a written agreement, contract, certificate or other instrument or document evidencing the terms and conditions of an individual Award granted under the Plan which may, in the discretion of the Company, be transmitted electronically to any Participant. Each Award Agreement shall be subject to the terms and conditions of the Plan.

"***Beneficial Owner***" has the meaning assigned to such term in Rule 13d-3 and Rule 13d-5 under the Exchange Act, except that in calculating the beneficial ownership of any particular Person, such Person shall be deemed to have beneficial ownership of all securities that such Person has the right to acquire by conversion or exercise of other securities, whether such right is currently exercisable or is exercisable only after the passage of any length of time. The terms "***Beneficially Owns***" and "***Beneficially Owned***" have a corresponding meaning.

"***Board***" means the Board of Directors of the Company, as constituted at any time.

"***Cause***" means, with respect to any Employee or Consultant: (a) If the Employee or Consultant is a party to an employment or service agreement with the Company or its Affiliates and such agreement provides for a definition of Cause, the definition contained therein; or (b) If no such agreement exists, or if such agreement does not define Cause: (i) the conviction of or plea of guilty or no contest to, a felony or a crime involving moral turpitude; (ii) the commission of a felony or a crime involving moral turpitude for which charges have been filed or the circumstances of which are such that, if sufficient admissible evidence of guilt were available to prosecuting authorities, such authorities would typically elect to prosecute the alleged offender given all the circumstances; (iii) the commission of any other material act involving willful malfeasance or fiduciary breach with respect to the Company or an Affiliate;

(iv) conduct that results in or would reasonably be expected or intended to result in material harm to the reputation or business of the Company or any of its Affiliates; (v) gross negligence or willful misconduct with respect to the Company or an Affiliate; or (vi) material violation of state or federal securities laws. For this purpose, a first offense of drunk driving shall be deemed not to involve moral turpitude.

The Committee, in its absolute discretion, shall determine the effect of all matters and questions relating to the existence of and whether a Participant has been discharged for Cause.

"***Change in Control***" means: (a) The direct or indirect sale, transfer, conveyance or other disposition (other than by way of merger or consolidation), in one or a series of related transactions, of all or substantially all of the properties or assets of the Company and its subsidiaries, taken as a whole, to any Person that is not a subsidiary of the Company; (b) The Incumbent Directors cease for any reason to constitute at least a majority of the Board; (c) The date which is 10 business days before the consummation of a complete liquidation or dissolution of the Company; (d) The acquisition by any Person of Beneficial Ownership of 50% or more of either (i) the then outstanding shares of Common Stock of the Company, taking into account as outstanding for this purpose such Common Stock issuable upon the exercise of options or warrants, the conversion of convertible stock or debt, and the exercise of any similar right to acquire such Common Stock (the "***Outstanding Company Common Stock***") or (ii) the combined voting power of the then outstanding voting securities of the Company entitled to vote generally in the election of directors (the "***Outstanding Company Voting Securities***"); *provided*, *however*, that for purposes of this Plan, the following acquisitions shall not constitute a Change in Control: (A) any acquisition which complies with clauses, (i), (ii) and (iii) of subsection (e) of this definition, or (B) in respect of an Award held by a particular Participant, any acquisition by the Participant or any group of persons including the Participant (or any entity controlled by the Participant or any group of persons including the Participant); or (e) The consummation of a reorganization, merger, (whether or not the approval of the Company's stockholders is required for such merger), consolidation, statutory share exchange or similar form of corporate transaction involving the Company that requires the approval of the Company's stockholders, whether for such transaction or the issuance of securities in the transaction (a "***Business Combination***"), unless immediately following such Business Combination: (i) more than 50% of the total voting power of (A) the entity resulting from such Business Combination (the "***Surviving Company***"), or (B) if applicable, the ultimate parent entity that directly or indirectly has beneficial ownership of sufficient voting securities eligible to elect a majority of the members of the board of directors (or the analogous governing body) of the Surviving Company (the "***Parent Company***"), is represented by the Outstanding Company Voting Securities that were outstanding immediately before such Business Combination (or, if applicable, is represented by shares into which the Outstanding Company Voting Securities were converted pursuant to such Business Combination), and such voting power among the holders thereof is in substantially the same proportion as the voting power of the Outstanding Company Voting Securities among the holders thereof immediately before the Business Combination; (ii) no Person (other than Claire Reiss or her Affiliates or any employee benefit plan sponsored or maintained by the Surviving Company or the Parent Company) is or becomes the Beneficial Owner, directly or indirectly, of 50% or more of the total voting power of the outstanding voting securities eligible to elect members of the board of directors of the Parent Company (or the analogous governing body) (or, if there is no Parent Company, the Surviving Company); and (iii) at least a majority of the members of the board of directors (or the analogous governing body) of the Parent Company (or, if there is no Parent Company, the Surviving Company) following the consummation of the Business Combination were Board members at the time of the Board's approval of the execution of the initial agreement providing for such Business Combination. Notwithstanding the foregoing, a transaction or event shall not constitute a Change in Control if it does not qualify as a change in control event within the meaning of Section 409A and such failure to qualify would, in the circumstances, cause a Section 409A problem.

"***Code***" means the Internal Revenue Code of 1986, as it may be amended from time to time. Any reference to a section of the Code shall be deemed to include a reference to any regulations promulgated thereunder.

"***Committee***" means a committee of one or more members of the Board appointed by the Board to administer the Plan in accordance with Section 3.3, Section 3.4 and Section 4.5.

"***Common Stock***" means the common stock, $0.0001 par value per share, of the Company, or such other securities of the Company as may be designated by the Committee from time to time in substitution thereof.

"***Company***" means Biocept, Inc., a Delaware corporation, and any successor thereto.

"***Consultant***" means any individual who is engaged by the Company or any Affiliate to render consulting or advisory services.

"***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Consultant or Director, is not interrupted or terminated. The Participant's Continuous Service shall not be deemed to have terminated merely because of a change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Participant renders such service, *provided that* there is not otherwise any interruption or termination of the Participant's Continuous Service; *provided further* that if any Award is subject to Section 409A, termination of service shall not be deemed to have occurred for purposes of any provision of this Plan or such Award providing for the payment of any amounts or benefits that may be considered nonqualified deferred compensation under Section 409A upon or following a termination of service unless such termination is also a "separation from service" within the meaning of Section 409A, and, for purposes of any such provision of this Plan or such Award, references to a "termination," "termination of service" or like terms shall mean such a separation from service (determined in accordance with the presumptions set forth in Section 1.409A-1(h) of the Treasury Regulations). For example, a change in status from an Employee of the Company to a Director of an Affiliate will not constitute an interruption of Continuous Service.

"***Director***" means a member of the Board.

"***Disability***" means that the Participant is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment; *provided, however*, for purposes of determining the term of an Incentive Stock Option pursuant to Section 6.10 hereof, the term Disability shall have the meaning ascribed to it under Section 22(e)(3) of the Code. The determination of whether an individual has a Disability shall be conclusively determined under procedures established by the Committee. Except in situations where the Committee is determining Disability for purposes of the term of an Incentive Stock Option pursuant to Section 6.10 hereof within the meaning of Section 22(e)(3) of the Code, the Committee may rely on any determination that a Participant is disabled for purposes of benefits under any long-term disability plan maintained by the Company or any Affiliate in which a Participant participates.

"***Disqualifying Disposition***" has the meaning set forth in Section 14.11.

"***Effective Date***" shall mean the date on which this Plan was originally adopted by the Board, which was July 31, 2013.

"***Employee***" means any person, not excluding a person who is also an Officer or Director, employed by the Company or an Affiliate; *provided, that*, for purposes of determining eligibility to receive Incentive Stock Options, an Employee shall mean an employee of the Company or a parent or subsidiary corporation within the meaning of Section 424 of the Code. Mere service as a Director or payment of a director's fee by the Company or an Affiliate shall not be sufficient to constitute "employment" by the Company or an Affiliate.

"***Exchange Act***" means the Securities Exchange Act of 1934, as amended.

"***Fair Market Value***" means, as of any date, the value of the Common Stock as determined below. If the Common Stock is listed on any US national securities exchange, the Fair Market Value shall be the closing price of a share of Common Stock (or if no sales were reported the closing price on the date immediately preceding such date) as quoted on such exchange on the day of determination, as reported in the *Wall Street Journal* or such other source as the Committee deems reliable. In the absence of an established market for the Common Stock on any US national securities exchange, the Fair Market Value shall be determined (as of the close of business on the date in question) in good faith by the Committee in a manner consistent with the valuation principles of Section 409A and such determination shall be conclusive and binding on all persons.

"***Free Standing Rights***" has the meaning set forth in Section 7.1(a).

"***Good Reason***" means: (a) If an Employee or Consultant is a party to an employment or service agreement with the Company or its Affiliates and such agreement provides for a definition of Good Reason, the definition contained therein; (b) If no such agreement exists or if such agreement does not define Good Reason, the definition of Good Reason set forth in the Employee or Consultant's Award Agreement; or (c) If the applicable Award Agreement does not define Good Reason, the occurrence of one or more of the following without the Participant's express written consent, which circumstances are not remedied by the Company within 30 days of its receipt of a written notice from the Participant describing the applicable circumstances (which notice must be provided, if ever, by the Participant within 40 days after the Participant's knowledge of the applicable circumstances; if the Participant does not timely deliver such notice, it shall be conclusively deemed that Good Reason is not present): (i) any material, adverse change in the Participant's duties, responsibilities, authority, title, status or reporting structure; (ii) a material reduction in the

Participant's base salary; or (iii) an involuntary geographical relocation of the Participant's principal office location by more than 50 miles. In no event shall a Participant's resignation be deemed to be with Good Reason (in relation to any particular circumstances alleged to constitute Good Reason) for purposes of this Plan or any Award Agreement unless the effective date of the Participant's resignation is before the earlier of 100 days after the Participant's knowledge of the applicable circumstances or 20 days after the 30-day remedy period described in the preceding sentence (if applicable) has expired without the circumstances being remedied.

"***Grant Date***" means the date on which the Committee adopts a resolution, or takes other appropriate action, expressly granting an Award to a Participant that specifies the key terms and conditions of the Award or, if a later date is set forth in such resolution, then such date as is set forth in such resolution.

"***Incentive Stock Option***" means an Option designated as and intended to qualify as, and qualifying as, an incentive stock option within the meaning of Section 422 of the Code.

"***Incumbent Directors***" means individuals who, on the Effective Date, constitute the Board, *provided that* any individual becoming a Director after the Effective Date whose election or nomination for election to the Board was approved by a vote of at least two-thirds of the Incumbent Directors then on the Board (either by a specific vote or by approval of the proxy statement of the Company in which such person is named as a nominee for Director without objection to such nomination) shall be an Incumbent Director. No individual initially elected or nominated as a director of the Company as a result of an actual or threatened election contest with respect to Directors or as a result of any other actual or threatened solicitation of proxies by or on behalf of any person other than the Board shall ever be an Incumbent Director.

"***Inducement Award***" means an Award, other than (i) an Incentive Stock Option or (ii) a Performance Compensation Award, that is granted pursuant to Section 4.5 of the Plan.

"***Inducement Award Rules***" means Nasdaq Marketplace Rule 5635(c)(4) and the related guidance under Nasdaq IM 5635-1.

"***Inducement Shares***" shall have the meaning set forth in Section 4.5.

"***Initial Amendment and Restatement Effective Date***" means June 16, 2015, the date the Plan was amended and restated by the Company's stockholders at the Company's 2015 Annual Meeting.

"***Negative Discretion***" means the discretion authorized by the Plan to be applied by the Committee to eliminate or reduce the size of a Performance Compensation Award in accordance with Section 7.3(d)(iv) of the Plan.

"***Non-Employee Director***" means a Director who is a "non-employee director" within the meaning of Rule 16b-3.

"***Non-qualified Stock Option***" means an Option that by its terms or under the circumstances of its grant does not qualify or is not intended to qualify as an Incentive Stock Option. Without limitation, to the extent that any Option designated as an Incentive Stock Option fails at any time, in whole or in part, to qualify as an Incentive Stock Option, it shall to that extent constitute a Non-qualified Stock Option.

"***Officer***" means a person who is an officer of the Company within the meaning and purposes of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

"***Option***" means an Incentive Stock Option or a Non-qualified Stock Option granted pursuant to the Plan.

"***Optionholder***" means a person to whom an Option is granted pursuant to the Plan or, if applicable, any other person who properly holds an outstanding Option.

"***Option Exercise Price***" means the price at which a share of Common Stock may be purchased upon the exercise of an Option.

"***Participant***" means an eligible person to whom an Award is granted pursuant to the Plan or, if applicable, any other person who properly holds an outstanding Award.

"***Performance Compensation Award***" means any Award designated by the Committee as a Performance Compensation Award pursuant to Section 7.3 of the Plan.

"***Performance Criteria***" means the criterion or criteria that the Committee shall select for purposes of establishing the Performance Goal(s) for a Performance Period with respect to any Performance Compensation Award

under the Plan. The Performance Criteria that will be used to establish the Performance Goal(s) shall be based on the attainment of specific levels of performance of the Company (or of an Affiliate, division, business unit or operational unit of the Company) and shall be limited to the following: (a) net earnings or net income (before or after taxes); (b) basic or diluted earnings per share (before or after taxes); (c) net revenue or net revenue growth; (d) gross revenue; (e) gross profit or gross profit growth; (f) net operating profit (before or after taxes); (g) return on assets, capital, invested capital, equity, or sales; (h) cash flow (including, but not limited to, operating cash flow, free cash flow, and cash flow return on capital); (i) earnings before or after taxes, interest, depreciation and/or amortization; (j) gross or operating margins; (k) improvements in capital structure; (l) budget and expense management; (m) productivity ratios; (n) economic value added or other value added measurements; (o) share price (including, but not limited to, stock price growth measures and total stockholder return); (p) expense targets; (q) margins; (r) operating efficiency; (s) working capital targets; (t) enterprise value; (u) safety record; (v) regulatory milestones; (w) scientific milestones; (x) customer acquisition; (y) completion of partnering agreement; (z) workforce retention; (aa) completion of acquisitions or business expansion; and (bb) individual business objectives.

Any one or more of the Performance Criteria may be used on an absolute or relative basis to measure the performance of the Company and/or an Affiliate as a whole or any division, business unit or operational unit of the Company and/or an Affiliate or any combination thereof, as the Committee may deem appropriate, or as compared to the performance of a group of comparable companies, or published or special index that the Committee, in its sole discretion, deems appropriate, or the Committee may select Performance Criterion (o) above as compared to various stock market indices. The Committee also has the authority to provide for accelerated vesting of any Award based on the achievement of Performance Goals pursuant to the Performance Criteria specified in this paragraph. The Committee shall define in an objective fashion the manner of calculating the Performance Criteria it selects to use for such Performance Period. In the event that applicable tax and/or securities laws change to permit the Committee discretion to alter the governing Performance Criteria without obtaining stockholder approval of such changes, the Committee shall have sole discretion to make such changes without obtaining stockholder approval.

"***Performance Formula***" means, for a Performance Period, the one or more objective formulas applied against the relevant Performance Goal to determine, with regard to the Performance Compensation Award of a particular Participant, whether all, some portion but less than all, or none of the Performance Compensation Award has been earned for the Performance Period.

"***Performance Goals***" means, for a Performance Period, the one or more goals established by the Committee for the Performance Period based upon the Performance Criteria. The Committee is authorized at any time, in its sole and absolute discretion, to adjust or modify the calculation of a Performance Goal for such Performance Period in order to prevent the dilution or enlargement of the rights of Participants based on the following events: (a) asset write-downs; (b) litigation or claim judgments or settlements; (c) the effect of changes in tax laws, accounting principles, or other laws or regulatory rules affecting reported results; (d) any reorganization and restructuring programs; (e) extraordinary nonrecurring items as described in Accounting Principles Board Opinion No.30 (or any successor or pronouncement thereto) and/or in management's discussion and analysis of financial condition and results of operations appearing in the Company's annual report to stockholders for the applicable year; (f) acquisitions or divestitures; (g) any other specific unusual or nonrecurring events, or objectively determinable category thereof; (h) foreign exchange gains and losses; and (i) a change in the Company's fiscal year.

"***Performance Period***" means the one or more periods of time in duration, as the Committee may select, over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Performance Compensation Award.

"***Person***" means any individual, entity, trust, partnership, organization, association, or (within the meaning of Section 13(d)(3) of the Exchange Act and the rules thereunder) group.

"***Permitted Transferee***" means: (a) a member of the Optionholder's or other Participant's immediate family (child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships), any person sharing the Optionholder's or other Participant's household (other than a tenant or employee), a trust in which these persons have more than 50% of the beneficial interest, a foundation in which these persons (or the Optionholder or other Participant) control the management of assets, and any other entity in which these persons (or the Optionholder or other Participant) own more than 50% of the voting interests; and (b) such other transferees as may be permitted by the Committee in its sole discretion so long as the Participant receives no consideration in connection with such transfer.

"***Plan***" means this Biocept, Inc. 2013 Equity Incentive Plan, as amended from time to time.

"***Related Rights***" has the meaning set forth in Section 7.1(a).

"***Restricted Award***" means any Award granted pursuant to Section 7.2(a).

"***Restricted Period***" has the meaning set forth in Section 7.2(a).

"***Restricted Stock***" has the meaning set forth in Section 7.2(a).

"***Restricted Stock Units***" has the meaning set forth in Section 7.2(a).

"***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

"***Section 409A***" means Section 409A of the Code, as in effect from time to time.

"***Securities Act***" means the Securities Act of 1933, as amended.

"***Stock Appreciation Right***" means the right pursuant to an Award granted under Section 7.1 to receive, upon exercise, an amount payable in cash or shares equal to the number of shares subject to the Stock Appreciation Right that is being exercised multiplied by the excess of (a) the Fair Market Value of a share of Common Stock on the date the Award is exercised, over (b) the exercise price specified in the Stock Appreciation Right Award Agreement.

"***Ten Percent Stockholder***" means a person who owns (or is deemed to own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or of any of its parent or subsidiary corporations.

"***Vested Unit***" has the meaning set forth in Section 7.2(e).

3. **ADMINISTRATION.**

3.1 **Authority of Committee**. The Plan shall be administered by the Committee or, in the Board's sole discretion, by the Board. (Notwithstanding references herein to the "***Committee***" and notwithstanding any prior delegation, if the Board generally or in an instance takes action with regard to administration of the Plan, the references herein to the authority or discretion of the Committee shall be read as, for the purpose of such action generally or in such instance (as the case may be), the authority or discretion of the Board.) Subject to the terms of the Plan, the Committee's charter and Applicable Laws, and subject to the Inducement Award Rules (where applicable), and in addition to other express powers and authorization conferred by the Plan, the Committee shall have the authority:

3.1.a to construe and interpret the Plan and apply its provisions;

3.1.b to promulgate, amend, and rescind rules and regulations relating to the administration of the Plan;

3.1.c to authorize any person to execute, on behalf of the Company, any instrument required to carry out the purposes of the Plan;

3.1.d to delegate (to the extent allowed under Delaware General Corporation Law Section 157 or other Applicable Laws) its authority to one or more Officers of the Company with respect to Awards that do not involve "insiders" within the meaning of Section 16 of the Exchange Act;

3.1.e to determine when Awards are to be granted under the Plan and the applicable Grant Date;

3.1.f from time to time to select, subject to the limitations set forth in this Plan, those Participants to whom Awards shall be granted;

3.1.g to determine the number of shares of Common Stock to be made subject to each Award;

3.1.h to determine whether each Option is to be an Incentive Stock Option or a Non-qualified Stock Option;

3.1.i to determine whether each Restricted Award is to be an Award of Restricted Stock or of Restricted Stock Units;

3.1.j to prescribe the terms and conditions of each Award, including, without limitation, the exercise price and medium of payment and vesting provisions, and to specify the provisions of the Award Agreement relating to such grant;

3.1.k to designate an Award (including a cash bonus) as a Performance Compensation Award and to select the Performance Criteria that will be used to establish the Performance Goals;

3.1.l to determine the identity or capacity of any persons who may be entitled to receive anything under or exercise a Participant's rights under any Award Agreement;

3.1.m to amend any outstanding Awards, including for the purpose of modifying the time or manner of vesting, or the term of any outstanding Award; *provided, however*, that if any such amendment impairs a Participant's rights or increases a Participant's obligations under his or her Award or creates or increases a Participant's federal income tax liability with respect to an Award, such amendment shall also be subject to the Participant's consent (and it being understood that these principles shall apply to any modification of the purchase price or the exercise price of any outstanding Award, *provided that* the Committee will not have the authority to (1) reduce the exercise, purchase or strike price of any outstanding Option or Stock Appreciation Right under the Plan, or (2) cancel any outstanding Option or Stock Appreciation Right that has an exercise price or strike price greater than the then-current Fair Market Value of the Common Stock in exchange for cash or other Awards under the Plan or otherwise, unless the stockholders of the Company have approved such an action within 12 months prior to such an event;

3.1.n to determine the duration and purpose of leaves of absences which may be granted to a Participant without constituting termination of their employment for purposes of the Plan;

3.1.o to make decisions with respect to outstanding Awards that may become necessary upon a change in corporate control or an event that triggers anti-dilution adjustments (in accordance with Sections 11 and 12 of the Plan);

3.1.p to interpret, administer, reconcile any inconsistency in, correct any defect in and/or supply any omission in the Plan and any instrument or agreement relating to, or Award granted under, the Plan; and

3.1.q to exercise discretion to make any and all other determinations which it determines to be necessary or advisable for the administration of the Plan.

3.2 **Committee Decisions Final**. All decisions made by the Committee pursuant to the provisions of the Plan shall be final and binding on the Company and the Participants.

3.3 **Delegation**. Subject to the Inducement Award Rules with respect to Inducement Awards, the Committee, or if no Committee has been appointed, the Board, may delegate administration of the Plan to a committee or committees of one or more members of the Board, and the term "***Committee***" shall apply to any person or persons to whom such authority has been delegated. The Committee shall have the power to delegate to a subcommittee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board or the Committee shall thereafter be to the committee or subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may abolish the Committee at any time and revest in the Board the administration of the Plan. The members of the Committee shall be appointed by and serve at the pleasure of the Board. From time to time, the Board may increase or decrease the size of the Committee, add additional members to, remove members (with or without cause) from, appoint new members in substitution therefor, and fill vacancies, however caused, in the Committee. The Committee shall act pursuant to a vote

of the majority of its members, whether present or not, or by the unanimous written consent of its members and minutes shall be kept of all of its meetings and copies thereof shall be provided to the Board. Subject to the limitations prescribed by the Plan and the Board, the Committee may establish and follow such rules and regulations for the conduct of its business as it may determine to be advisable. This Section 3.3 is not in derogation of Section 3.1(d).

3.4 **Committee Composition**. Subject to the Inducement Award Rules with respect to Inducement Awards, and except as otherwise determined by the Board, the Committee shall consist solely of two or more Non-Employee Directors and who also meet the independence requirements (if any) under the then applicable rules, regulations, listing requirements or listing maintenance requirements adopted by the principal national securities exchange on which the Common Stock is then listed. The Board shall have discretion to determine whether or not it intends to comply with the exemption requirements of Rule 16b-3. However, if the Board intends to satisfy such exemption requirements, with respect to Awards to any insider subject to Section 16 of the Exchange Act, the Committee shall be a compensation committee of the Board that at all times consists solely of two or more Non-Employee Directors. Within the scope of such authority, the Board or the Committee may delegate to a committee of one or more members of the Board who are not Non-Employee Directors the authority to grant Awards to eligible persons who are not then subject to Section 16 of the Exchange Act. Nothing herein shall create an inference that an Award is not validly granted under the Plan in the event Awards are granted under the Plan by a compensation committee of the Board that does not at all times consist solely of two or more Non-Employee Directors. This Section 3.4 is not in derogation of Section 3.1(d).

3.5 **Indemnification**. Service on the Committee is a form of service in the capacity of a member of the Board. In addition to such other rights of indemnification as they may have as Directors or members of the Committee, and to the extent allowed by Applicable Laws, the Committee members shall be indemnified by the Company against the reasonable expenses, including attorney's fees, actually incurred in connection with any action, suit or proceeding or in connection with any appeal therein, to which the Committee members may be party by reason of any action taken or failure to act under or in connection with the Plan or any Award granted under the Plan, and against all amounts paid by the Committee members in settlement thereof (*provided, however*, that the settlement has been approved by the Company, which approval shall not be unreasonably withheld) or paid by the Committee in satisfaction of a judgment in any such action, suit or proceeding, except in relation to matters as to which it shall be adjudged in such action, suit or proceeding that such Committee member(s) did not act in good faith and in a manner which such person reasonably believed to be in the best interests of the Company, or in the case of a criminal proceeding, had no reason to believe that the conduct complained of was unlawful; *provided, however*, that within 60 days after institution of any such action, suit or proceeding, such Committee member(s) shall, in writing, offer the Company the opportunity at its own expense to handle and defend such action, suit or proceeding.

3.6 **Exculpation**. No Director, Committee member or Employee shall be subject to any liability with respect to duties under the Plan unless the person acts fraudulently or in bad faith.

4. **Shares Subject to the Plan.**

4.1 **Share Reserve**. Subject to Sections 4.4, 4.5 and 11, the aggregate number of shares of Common Stock that may be available for issuance pursuant to Awards from and after the Initial Amendment and Restatement Effective Date will not exceed 2,336,409 shares, which is the sum of (1) 1,300,000 new shares of Common Stock, plus (2) the number of shares of Common Stock previously authorized by the Company stockholders (i) that remain available for issuance for future Award grants under Plan as of immediately prior to the Initial Amendment and Restatement Effective Date and (ii) that consist of the 2007 Plan Available Reserve plus (3) any shares underlying outstanding Awards under the Plan and 2007 Plan Awards that on or after the Amendment and Restatement Effective Date become available for issuance under the Plan again pursuant to Section 4.3 below shall be available for the grant of Awards under the Plan (such aggregate number of shares described in (1) through (3) the "***Share Reserve***"). During the terms of the Awards, the Company shall keep available at all times the number of shares of Common Stock required to satisfy such Awards. Shares of Common Stock available for distribution under the Plan may consist, in whole or in part, of authorized and unissued shares, or shares reacquired by the Company in any manner.

4.2 **Limitations**.

4.2.a Subject to the Share Reserve and adjustment in accordance with Section 11, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 2,336,409 shares of Common Stock.

4.3 **Reversion of Shares to the Share Reserve**. Any shares of Common Stock subject to an Award or a 2007 Plan Award that is canceled, forfeited or expires before exercise or realization, either in full or in part, shall to that extent again become available for issuance under the Plan. (For this purpose, repurchase of Restrict Stock at a nominal repurchase price is deemed a forfeiture.) Notwithstanding anything to the contrary contained herein: shares subject to an Award or a 2007 Plan Award shall not again be made available for issuance or delivery under the Plan if such shares are (a) shares used to satisfy the exercise or purchase price of such Award or 2007 Plan Award, including shares used to effect a "net exercise," in payment of an Option exercise price requirement, (b) shares delivered to or withheld by the Company to satisfy any tax withholding obligation in connection with an Award or a 2007 Plan Award, (c) shares covered by a stock-settled Stock Appreciation Right that were not issued upon the settlement of the Award, or (d) shares repurchased by the Company on the open market with the proceeds of the exercise or purchase price of a stock Award or a 2007 Plan Award.

4.4 **Minimum Vesting Requirements**. Excluding, for this purpose, any (i) substitute awards, (ii) awards to Non-Employee Directors that vest on the earlier of the one year anniversary of the date of grant or the next annual meeting of stockholders which is at least 50 weeks after the immediately preceding year's annual meeting, and (iii) Inducement Awards, no Option or Stock Appreciation Right and, effective for Awards granted on or after June 11, 2021 no other Award (including an Award that is a Performance Compensation Award or otherwise subject to vesting based on performance goals) will vest until at least twelve months following the date of grant of such Award; *provided, however*, that up to 5% of the Share Reserve (as defined in Section 4.1 and excluding the Inducement Shares) may be subject to Awards (including Awards that are Performance Compensation Awards or otherwise subject to vesting based on performance goals) that do not meet such vesting requirements and, *provided further*, for the avoidance of doubt, that the foregoing restriction does not apply to the Board's discretion to provide for accelerated exercisability or vesting of any Award, including in cases of retirement, death, disability or a change in control, in the terms of the Award or otherwise.

4.5 **Inducement Share Pool and Inducement Award Rules.** Subject to adjustment in accordance with Section 11, an additional 750,000 shares of Common Stock (which number reflects the Reverse Stock Split approved by our stockholders and effective on September 4, 2020) shall be reserved under the Plan, exclusively for the grant of Inducement Awards in compliance with Nasdaq Listing Rule 5635(c)(4) (the "***Inducement Shares***"). The Inducement Shares that may be awarded under this Section 4.5 shall be in addition to and shall not reduce the shares available for issuance under Section 4.1 of the Plan. The following rules and restrictions shall apply to any Inducement Award granted pursuant to the Plan:

4.5.a An Inducement Award may be granted only to an Employee who has not previously been an Employee or a Director of the Company or an Affiliate, except following a bona fide period of non-employment, as an inducement material to the individual's entering into employment with the Company within the meaning of Rule 5635(c)(4) of the Nasdaq Listing Rules and the Inducement Award Rules.

4.5.b All such Inducement Awards must be granted by a majority of the Company's "Independent Directors" (as such term is defined in Nasdaq Listing Rule 5605(a)(2)) or the Company's compensation committee, provided such committee is comprised solely of Independent Directors, in each case in accordance with Nasdaq Listing Rule 5635(c)(4) and the Inducement Award Rules.

4.5.c The Inducement Shares underlying any Inducement Awards shall be subject to the same share counting provisions as described in Section 4.3, except that such Inducement Shares shall count against, or shall be added back to, the reserve of Inducement Shares available for grant under this Section 4.5, and shall not count against, or be added back to, the Shares available for issuance under Section 4.1 of the Plan.

4.5.d The limits in Section 4.2 will not apply to Inducement Awards.

5. **Eligibility**.

5.1 **Eligibility for Specific Awards**. Incentive Stock Options may be granted only to Employees. Awards other than Incentive Stock Options may be granted to Employees, Consultants and Directors.

5.2 **Ten Percent Stockholders**. A Ten Percent Stockholder shall not be granted an Incentive Stock Option unless the Option Exercise Price is at least 110% of the Fair Market Value of the Common Stock at the Grant Date and the Option is not exercisable after the expiration of five years from the Grant Date.

6. **Option Provisions**. Each Option granted under the Plan shall be evidenced by an Award Agreement, and shall be voided if the Award Agreement is not executed and delivered by the Participant within 30 days after the Grant Date. Each Option so granted shall be subject to the conditions set forth in this Section 6, and to such other conditions not inconsistent with the Plan as may be reflected in the applicable Award Agreement. All Options shall be separately designated Incentive Stock Options or Non-qualified Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. Notwithstanding the foregoing, the Company shall have no liability to any Participant or any other person if an Option designated as an Incentive Stock Option fails to qualify as such at any time or if an Option (or other Award) is determined to constitute "nonqualified deferred compensation" within the meaning of Section 409A and the terms of such Option (or other Award) do not satisfy the requirements of Section 409A. The provisions of separate Options need not be identical, but each Option shall include (through incorporation of provisions hereof by reference in the Option or otherwise) the substance of each of the following provisions:

6.1 **Term**. Subject to the provisions of Section 5.2 regarding Ten Percent Stockholders and a requirement that no Incentive Stock Option shall be exercisable after the expiration of 10 years from the Grant Date, the term of an Incentive Stock Option granted under the Plan shall be determined by the Committee. The term of a Non-qualified Stock Option granted under the Plan shall be determined by the Committee; *provided, however*, no Non-qualified Stock Option shall be exercisable after the expiration of 10 years from the Grant Date.

6.2 **Exercise Price of An Incentive Stock Option**. Subject to the provisions of Section 5.2 regarding Ten Percent Stockholders, the Option Exercise Price of each Incentive Stock Option shall be not less than 100% of the Fair Market Value on the Grant Date of the Common Stock subject to the Option. Notwithstanding the foregoing, an Incentive Stock Option may be granted with an Option Exercise Price lower than that set forth in the preceding sentence if such Option is granted pursuant to an assumption or substitution for another option in a manner satisfying the provisions of Section 424(a) of the Code and Section 409A.

6.3 **Exercise Price of a Non-qualified Stock Option**. The Option Exercise Price of each Non-qualified Stock Option shall be not less than 100% of the Fair Market Value on the Grant Date of the Common Stock subject to the Option. Notwithstanding the foregoing, a Non-qualified Stock Option may be granted with an Option Exercise Price lower than that set forth in the preceding sentence if such Option is granted pursuant to an assumption or substitution for another option in a manner satisfying the provisions of Section 409A.

6.4 **Consideration**. The Option Exercise Price of Common Stock acquired pursuant to an Option shall be paid, to the extent permitted by applicable statutes and regulations, either (a) in cash or by bank check on the day the Option is exercised or (b) in the discretion (exercised either generally or only for the particular instance) of the Committee, upon such terms as the Committee shall approve, the Option Exercise Price may be paid on the day the Option is exercised: (i) by delivery to the Company of other Common Stock, duly endorsed for transfer to the Company, with a Fair Market Value on the date of delivery equal to the Option Exercise Price (or portion thereof) due for the number of shares being acquired, or by means of attestation whereby the Participant identifies for delivery specific shares of Common Stock that have an aggregate Fair Market Value on the date of attestation equal to the Option Exercise Price (or portion thereof) and receives a number of shares of Common Stock equal to the difference between the number of shares thereby purchased and the number of identified attestation shares of Common Stock; (ii) a "cashless" same-day-sale exercise program

established with a broker; (iii) by reduction in the number of shares of Common Stock otherwise deliverable upon exercise of such Option with a Fair Market Value equal to the aggregate Option Exercise Price at the time of exercise; (iv) any combination of the foregoing methods; or (v) in any other form of legal consideration that may be acceptable to the Committee. Unless otherwise specifically provided in the Option, the exercise price of Common Stock acquired pursuant to an Option that is (with Committee approval) paid by delivery (or attestation) to the Company of other Common Stock acquired, directly or indirectly from the Company, shall be paid only by shares of the Common Stock of the Company that have been held for more than six months (or such longer or shorter period of time required to avoid a charge to earnings for financial accounting purposes). Notwithstanding the foregoing, during any time the Common Stock is publicly traded an exercise by a Director or Officer that involves or may involve a direct or indirect extension of credit or arrangement of an extension of credit by the Company, directly or indirectly, in violation of Section 402(a) of the Sarbanes-Oxley Act of 2002 shall be prohibited with respect to any Award under this Plan.

6.5 **Transferability of An Incentive Stock Option**. An Incentive Stock Option shall not be transferable except by will or by the laws of descent and distribution or pursuant to qualified domestic relations orders under Applicable Laws and shall be exercisable during the lifetime of the Optionholder only by the Optionholder.

6.6 **Transferability of a Non-qualified Stock Option**. A Non-qualified Stock Option may, in the sole discretion of the Committee, be transferable to a Permitted Transferee, upon approval by the Committee to the extent provided in the Award Agreement. No such transfer which is a "prohibited transfer for value" (within the meaning of the General Instructions to Securities Act Form S-8) shall be allowed. If the Non-qualified Stock Option does not provide for transferability, then the Non-qualified Stock Option shall not be transferable except by will or by the laws of descent and distribution or pursuant to qualified domestic relations orders under Applicable Laws and shall be exercisable during the lifetime of the Optionholder only by the Optionholder.

6.7 **Vesting of Options**. Subject to Section 4.4, each Option may, but need not, vest and therefore become exercisable in periodic installments that may, but need not, be equal. The Option may be subject to such other terms and conditions on the time or times when it may be exercised (which may be based on performance or other criteria) as the Committee may deem appropriate and in accordance with Section 4.4. The vesting provisions of individual Options may vary.

6.8 **Termination of Continuous Service**. Unless otherwise provided in an Award Agreement or in an employment agreement the terms of which have been approved by the Committee, in the event an Optionholder's Continuous Service terminates (other than upon the Optionholder's death or Disability), the Optionholder may exercise his or her Option (to the extent that the Optionholder was entitled to exercise such Option as of the date of termination) but only within such period of time ending on the earlier of (a) the date three months following the termination of the Optionholder's Continuous Service or (b) the expiration of the term of the Option as set forth in the Award Agreement; *provided that*, if the termination of Continuous Service is by the Company for Cause, all outstanding Options (whether or not vested) shall immediately terminate and cease to be exercisable. If, after termination of Continuous Service, the Optionholder does not exercise his or her Option within the time specified in the Award Agreement, the Option shall terminate.

6.9 **Extension of Termination Date**. An Optionholder's Award Agreement may also provide that if the exercise of the Option following the termination of the Optionholder's Continuous Service for any reason would be prohibited at any time because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act or any other state or federal securities law or the rules of any securities exchange or interdealer quotation system, then the Option shall terminate on the earlier of (a) the expiration of the term of the Option in accordance with Section 6.1 or (b) the expiration of a period after termination of the Participant's Continuous Service that is three months after the end of the period during which the exercise of the Option would be in violation of such registration or other securities law requirements.

6.10 **Disability of Optionholder**. Unless otherwise provided in an Award Agreement, in the event that an Optionholder's Continuous Service terminates as a result of the Optionholder's Disability, the Optionholder may exercise his or her Option (to the extent that the Optionholder was entitled to exercise such Option as

of the date of termination), but only within such period of time ending on the earlier of (a) the date 12 months following such termination or (b) the expiration of the term of the Option as set forth in the Award Agreement. If, after termination of Continuous Service, the Optionholder does not exercise his or her Option within the time specified herein or in the Award Agreement, the Option shall terminate.

6.11 **Death of Optionholder**. Unless otherwise provided in an Award Agreement, in the event an Optionholder's Continuous Service terminates as a result of the Optionholder's death, then the Option may be exercised (to the extent the Optionholder was entitled to exercise such Option as of the date of death) by the Optionholder's estate or by a person who acquired the right to exercise the Option by bequest or inheritance, but only within the period ending on the earlier of (a) the date 12 months following the date of death or (b) the expiration of the term of such Option as set forth in the Award Agreement. If, after the Optionholder's death, the Option is not exercised within the time specified herein or in the Award Agreement, the Option shall terminate.

6.12 **Incentive Stock Option $100,000 Limitation**. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and its Affiliates) exceeds $100,000, the Options or portions thereof which exceed such limit (according to the order in which they were granted) shall be treated as Non-qualified Stock Options.

6.13 **Fractions**. No Option may be exercised for a fraction of a share of Common Stock.

7. **Provisions of Awards Other Than Options.**

7.1 **Stock Appreciation Rights**.

7.1.a **General**. Each Stock Appreciation Right granted under the Plan shall be evidenced by an Award Agreement, and shall be voided if the Award Agreement is not executed and delivered by the Participant within 30 days after the Grant Date. Each Stock Appreciation Right so granted shall be subject to the conditions set forth in this Section 7.1, and to such other conditions (including as to transferability and ability to be pledged or otherwise encumbered) not inconsistent with the Plan as may be reflected in the applicable Award Agreement. Stock Appreciation Rights may be granted alone ("***Free Standing Rights***") or in tandem with an Option granted under the Plan ("***Related Rights***").

7.1.b **Grant Requirements**. Any Related Right that relates to a Non-qualified Stock Option may be granted at the same time the Option is granted or at any time thereafter but before the exercise or expiration of the Option. Any Related Right that relates to an Incentive Stock Option must be granted at the same time the Incentive Stock Option is granted.

7.1.c **Term of Stock Appreciation Rights**. The term of a Stock Appreciation Right granted under the Plan shall be determined by the Committee; *provided, however*, no Stock Appreciation Right shall be exercisable later than the tenth anniversary of its Grant Date.

7.1.d **Vesting of Stock Appreciation Rights**. Subject to Section 4.4, each Stock Appreciation Right may, but need not, vest and therefore become exercisable in periodic installments that may, but need not, be equal. The Stock Appreciation Right may be subject to such other terms and conditions on the time or times when it may be exercised as the Committee may deem appropriate in accordance with Section 4.4. The vesting provisions of individual Stock Appreciation Rights may vary.

7.1.e **Exercise and Payment**. Upon exercise of a Stock Appreciation Right, the holder shall be entitled to receive from the Company an amount equal to the number of shares of Common Stock subject to the Stock Appreciation Right that is being exercised multiplied by the excess of (i) the Fair Market Value of a share of Common Stock on the date the Award is exercised, over (ii) the exercise price specified in the Stock Appreciation Right or related Option. Payment with respect to the exercise of a Stock Appreciation Right shall be made as of and as soon as practicable after the date of exercise. Payment

shall be made in the form of shares of Common Stock, cash or a combination thereof, as determined by the Committee. The Award Agreement may, in the Committee's discretion, provide that a Stock Appreciation Right shall be paid out immediately upon it vesting; and in such case "exercise" shall be deemed to occur automatically upon vesting.

7.1.f **Exercise Price**. The exercise price of a Free Standing Stock Appreciation Right shall be determined by the Committee, but shall not be less than 100% of the Fair Market Value of one share of Common Stock on the Grant Date of such Stock Appreciation Right. However, a Stock Appreciation Right may be granted with an exercise price lower than that set forth in the preceding sentence if such Stock Appreciation Right is granted pursuant to an assumption or substitution for another stock appreciation right in a manner satisfying the provisions of Section 409A. A Related Right granted simultaneously with or after the grant of an Option and in conjunction therewith or in the alternative thereto shall have the same exercise price as the related Option, shall be transferable only upon the same terms and conditions as the related Option, and shall be exercisable only to the same extent as the related Option; *provided, however*, that a Stock Appreciation Right, by its terms, shall be exercisable only when the Fair Market Value per share of Common Stock subject to the Stock Appreciation Right and related Option exceeds the exercise price per share thereof and no Stock Appreciation Rights may be granted in tandem with an Option unless the Committee determines that the requirements of Section 7.1(b) are satisfied.

7.1.g **Reduction in the Underlying Option Shares**. Upon any exercise of a Related Right, the number of shares of Common Stock for which any related Option shall be exercisable shall be reduced by the number of shares for which the Stock Appreciation Right has been exercised. The number of shares of Common Stock for which a Related Right shall be exercisable shall be reduced upon any exercise of any related Option by the number of shares of Common Stock for which such Option has been exercised.

7.1.h **Fractions**. No Stock Appreciation Right may be exercised for a fraction of a share of Common Stock.

7.2 **Restricted Awards**.

7.2.a **General**. A Restricted Award is an Award of actual shares of Common Stock ("***Restricted Stock***") or hypothetical Common Stock units ("***Restricted Stock Units***") having a value equal to the Fair Market Value of an identical number of shares of Common Stock, which may, but need not, provide that such Restricted Award may not be sold, assigned, transferred or otherwise disposed of, pledged or hypothecated as collateral for a loan or as security for the performance of any obligation or for any other purpose for such period (the "***Restricted Period***") as the Committee shall determine. Each Restricted Award granted under the Plan shall be evidenced by an Award Agreement, and shall be voided if the Award Agreement is not executed and delivered by the Participant within 30 days after the Grant Date. Each Restricted Award so granted shall be subject to the conditions set forth in this Section 7.2, and to such other conditions not inconsistent with the Plan as may be reflected in the applicable Award Agreement.

7.2.b **Restricted Stock and Restricted Stock Units**

7.2.b.i Each Participant granted Restricted Stock shall execute and deliver to the Company an Award Agreement with respect to the Restricted Stock setting forth the restrictions and other terms and conditions applicable to such Restricted Stock. If the Committee determines that the Restricted Stock shall be held by the Company or in escrow rather than delivered to the Participant pending the release of the applicable restrictions, the Committee may require the Participant to additionally execute and deliver to the Company (A) an escrow agreement satisfactory to the Committee, if applicable and (B) the appropriate blank stock power with respect to the Restricted Stock covered by such agreement. If a Participant fails to execute an agreement evidencing an Award of Restricted Stock and, if applicable, an escrow agreement and stock power, the Award shall be null and void. Subject to the restrictions set forth in the Award, the Participant generally shall have the rights and privileges of a stockholder as to such Restricted Stock, including the

right to vote such Restricted Stock and the right to receive dividends; *provided that*, any cash dividends and stock dividends with respect to the Restricted Stock shall be withheld by the Company for the Participant's account, and interest may be credited on the amount of the cash dividends withheld at a rate and subject to such terms as determined by the Committee. The cash dividends or stock dividends so withheld by the Committee and attributable to any particular share of Restricted Stock (and earnings thereon, if applicable) shall be distributed to the Participant in cash or, at the discretion of the Committee, in shares of Common Stock having a Fair Market Value equal to the amount of such dividends, if applicable, upon the release of restrictions on such share and, if such share is forfeited, the Participant shall have no right to such dividends. The consideration for Restricted Stock shall be, as determined by the Committee in its discretion and set forth in the Restricted Award, given in the form of cash, past services rendered to the Company or its Affiliate, and/or (if allowed by Applicable Laws) services to be rendered to the Company or its Affiliate during the Restricted Period.

7.2.b.ii The terms and conditions of a grant of Restricted Stock Units shall be reflected in an Award Agreement. No shares of Common Stock shall be issued at the time a Restricted Stock Unit is granted, and the Company will not be required to set aside a fund for the payment of any such Award. A Participant shall have no voting rights with respect to any Restricted Stock Units granted hereunder.

7.2.c **Restrictions**

7.2.c.i Restricted Stock awarded to a Participant shall be subject to the following restrictions until the expiration of the Restricted Period, and to such other terms and conditions as may be set forth in the applicable Award Agreement: (A) if an escrow arrangement is used, the Participant shall not be entitled to delivery of the stock certificate; (B) the shares shall be subject to the restrictions on transferability set forth in the Award Agreement; (C) the shares shall be subject to forfeiture to the extent provided in the applicable Award Agreement; and (D) to the extent such shares are forfeited, the stock certificates shall be returned to the Company, and all rights of the Participant to such shares and as a stockholder with respect to such shares shall terminate without further obligation on the part of the Company.

7.2.c.i.1 If applicable state law requires a Participant to pay to the Company in cash at least the par value per share of Restricted Stock in connection with purchase of the Restricted Stock, the Participant shall pay to the Company in cash an amount equal to the par value per share times the number of shares of Restricted Stock; and all reference herein to forfeiture of Restricted Stock shall instead be read as references to repurchase of such Restricted Stock for a cash amount equal to such par value per share times the number of shares so repurchased. The terms upon which such repurchase right shall be exercisable (including the period and procedure for exercise and the appropriate vesting schedule for the purchased shares) shall be established by the Committee and set forth in the Award Agreement.

7.2.c.ii Restricted Stock Units awarded to any Participant shall be subject to (A) forfeiture until the expiration of the Restricted Period, and satisfaction of any applicable Performance Goals during such period, to the extent provided in the applicable Award Agreement, and to the extent such Restricted Stock Units are forfeited, all rights of the Participant to such Restricted Stock Units shall terminate without further obligation on the part of the Company and (B) such other terms and conditions (including as to transferability and ability to be pledge or otherwise encumbered) as may be set forth in the applicable Award Agreement. No transfer which is a "prohibited transfer for value" (within the meaning of the General Instructions to Securities Act Form S-8) shall be allowed.

7.2.c.iii Subject to the provisions of the Plan, including Section 12, the Committee shall have the authority to remove any or all of the restrictions on the Restricted Stock and Restricted Stock Units whenever it may determine that, by reason of changes in Applicable Laws or other changes

in circumstances arising after the date the Restricted Stock or Restricted Stock Units are granted, such action is appropriate.

7.2.d **Restricted Period**. Subject to Section 4.4, with respect to Restricted Awards, the Restricted Period shall commence on the Grant Date and end or lapse at the time or times set forth on a schedule established by the Committee in the applicable Award Agreement.

7.2.e **Delivery of Restricted Stock and Settlement of Restricted Stock Units**. Upon the expiration of the Restricted Period with respect to any shares of Restricted Stock, the restrictions set forth in Section 7.2(c) and the applicable Award Agreement shall be of no further force or effect with respect to such shares, except as set forth in the applicable Award Agreement. If an escrow arrangement is used, upon such expiration, the Company shall as soon as practicable deliver to the Participant, or his or her beneficiary, without charge, the stock certificate evidencing the shares of Restricted Stock which have not then been forfeited and with respect to which the Restricted Period has expired (to the nearest full share) and any cash dividends or stock dividends credited to the Participant's account with respect to such Restricted Stock and the interest thereon, if any. Upon the expiration of the Restricted Period with respect to any outstanding Restricted Stock Units, the Company shall as soon as practicable deliver to the Participant, or his or her beneficiary, without charge, one share of Common Stock for each such outstanding Restricted Stock Unit ("***Vested Unit***"); *provided, however*, that, if explicitly provided in the applicable Award Agreement, the Committee may, in its sole discretion, elect to pay cash or part cash and part Common Stock in lieu of delivering only shares of Common Stock for Vested Units. If a cash payment is made in lieu of delivering shares of Common Stock, the amount of such payment shall be equal to the Fair Market Value of the Common Stock as of the date on which the Restricted Period lapsed with respect to each Vested Unit.

7.2.f **Stock Restrictions**. Each certificate representing Restricted Stock awarded under the Plan shall bear a legend in such form as the Company deems appropriate. Any new, substituted or additional securities or other property (including money paid other than as a regular cash dividend) which the Participant may have the right to receive with respect to the Participant's Restricted Stock by reason of any stock dividend, stock split, recapitalization, combination of shares, exchange of shares or other change affecting the outstanding Common Stock as a class without the Company's receipt of consideration shall be issued subject to (i) the same vesting requirements applicable to the Participant's unvested shares of Restricted Stock and (ii) such escrow arrangements as the Committee shall deem appropriate.

7.3 **Performance Compensation Awards**.

7.3.a **Eligibility**. The Committee will, in its sole discretion, designate within the first 90 days of a Performance Period which Participants will be eligible to receive Performance Compensation Awards in respect of such Performance Period. However, designation of a Participant eligible to receive an Award hereunder for a Performance Period shall not in any manner entitle the Participant to receive payment in respect of any Performance Compensation Award for such Performance Period. The determination as to whether or not such Participant becomes entitled to payment in respect of any Performance Compensation Award shall be decided solely in accordance with the provisions of this Section 7.3. Moreover, designation of a Participant eligible to receive an Award hereunder for a particular Performance Period shall not require designation of such Participant eligible to receive an Award hereunder in any subsequent Performance Period and designation of one person as a Participant eligible to receive an Award hereunder shall not require designation of any other person as a Participant eligible to receive an Award hereunder in such period or in any other period.

7.3.b **Discretion of Committee with Respect to Performance Compensation Awards**. With regard to a particular Performance Period, subject to Section 4.4, the Committee shall have full discretion to select the length of such Performance Period, the type(s) of Performance Compensation Awards to be issued, the Performance Criteria that will be used to establish the Performance Goal(s), the kind(s) and/or level(s) of the Performance Goal(s) that is (are) to apply to the Company and the Performance Formula. The Committee shall, with regard to the Performance Compensation Awards to be issued for such

Performance Period, exercise its discretion with respect to each of the matters enumerated in the immediately preceding sentence of this Section 7.3(c) and record the same in writing.

7.3.c **Payment of Performance Compensation Awards**

7.3.c.i **Condition to Receipt of Payment**. Unless otherwise provided in the applicable Award Agreement, a Participant must be employed by the Company on the last day of a Performance Period to be eligible for payment in respect of a Performance Compensation Award for such Performance Period.

7.3.c.ii **Limitation**. A Participant shall be eligible to receive payment in respect of a Performance Compensation Award only to the extent that: (A) the Performance Goals for such period are achieved; and (B) the Performance Formula as applied against such Performance Goals determines that all or some portion of such Participant's Performance Compensation Award has been earned for the Performance Period.

7.3.c.iii **Certification**. Following the completion of a Performance Period, the Committee shall review and certify in writing whether, and to what extent, the Performance Goals for the Performance Period have been achieved and, if so, calculate and certify in writing the amount of the Performance Compensation Awards earned for the period based upon the Performance Formula. The Committee shall then determine the actual size of each Participant's Performance Compensation Award for the Performance Period and, in so doing, may apply Negative Discretion in accordance with Section 7.3(d)(iv) hereof, if and when it deems appropriate.

7.3.c.iv **Use of Discretion**. In determining the actual size of an individual Performance Compensation Award for a Performance Period, the Committee may reduce or eliminate the amount of the Performance Compensation Award earned under the Performance Formula in the Performance Period through the use of Negative Discretion if, in its sole judgment, such reduction or elimination is appropriate. The Committee shall not have the discretion to (A) grant or provide payment in respect of Performance Compensation Awards for a Performance Period if the Performance Goals for such Performance Period have not been attained or (B) increase a Performance Compensation Award above the maximum amount payable under Section 7.3(d)(vi) of the Plan.

7.3.c.v **Timing of Award Payments**. Performance Compensation Awards granted for a Performance Period shall be paid to Participants as soon as administratively practicable following completion of the certifications required by this Section 7.3 but in no event later than 2 1/2 months following the end of the fiscal year during which the Performance Period is completed.

8. **Show-Stopper Conditions.**

8.1 **Securities Law Compliance**. Each Award Agreement shall provide (and such provision shall control over any other provision of the Plan or the Award Agreement which would be to the contrary) that no shares of Common Stock shall be purchased, sold, issued or delivered thereunder unless and until (a) any then applicable requirements of state or federal laws and regulatory agencies have been fully complied with to the satisfaction of the Company and its counsel and (b) if required to do so by the Company, the Participant has executed and delivered to the Company a letter of investment intent in such form and containing such provisions as the Committee may require. The Company shall use reasonable efforts to seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Awards and to issue and sell shares of Common Stock upon exercise of the Awards; *provided*, *however*, that this undertaking shall not require the Company to register under the Securities Act the Plan, any Award or any Common Stock issued or issuable pursuant to any such Award. If, after reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority which counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Awards unless and until such authority is obtained.

8.2 **Withholding Obligations**. Each Award Agreement shall provide (and such provision shall control over any other provision of the Plan or the Award Agreement which would be to the contrary) that no shares of Common Stock shall be purchased, sold, issued or delivered thereunder unless and until any then Applicable Laws for the payment of employee-side withholding taxes in connection therewith have been satisfied by (a) a cash payment by the Participant to the Company of 100% of such amount, or (b) as may be allowed by the following sentence. To the extent (if any) provided by the terms of an Award Agreement and subject to the discretion of the Committee, the Participant may satisfy the preceding sentence's requirement for payment of any federal, state or local tax withholding obligation relating to the exercise or acquisition of Common Stock under an Award by any of the following means (if so expressly allowed) or by a combination of such means expressly allowed, in any event totaling in value 100% of such amount: (a) authorizing the Company to withhold cash from any cash compensation to be paid to the Participant, provided both the Company and the Participant actually and reasonably believe cash compensation sufficiently large will become payable to the Participant within 45 days; (b) tendering a cash payment; (c) authorizing the Company to withhold shares of Common Stock from the shares of Common Stock otherwise issuable to the Participant as a result of the exercise or acquisition of Common Stock under the Award, *provided*, *however*, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by Applicable Law; or (d) delivering to the Company previously owned and unencumbered shares of Common Stock of the Company. Common Stock so withheld or delivered would be valued at its Fair Market Value as of the date of measurement of the amount of income subject to withholding.

9. **Use of Proceeds from Stock**. Proceeds from the sale of Common Stock pursuant to Awards, or upon exercise thereof, shall constitute general funds of the Company.

10. **Miscellaneous**.

10.1 **Acceleration of Exercisability and Vesting**. The Committee shall have the power to accelerate the time at which an Award may first be exercised or the time during which an Award or any part thereof will vest (or restrictions lapse), notwithstanding the provisions in the Award stating the time at which it may first be exercised or the time during which it will vest (or restrictions lapse); *provided that* if such action is taken in connection with a Change in Control, such action shall be made only in accordance with the provisions of Sections 11 and 12.

10.2 **Stockholder Rights**. Except as provided in the Plan or an Award Agreement, no Participant shall be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to such Award unless and until such Participant has satisfied all requirements for exercise of the Award pursuant to its terms and no adjustment shall be made for dividends (ordinary or extraordinary, whether in cash, securities or other property) or distributions of other rights for which the record date is before the date such Common Stock certificate is issued, except as provided in Section 11 hereof.

10.3 **No Employment or Other Service Rights**. Nothing in the Plan or any instrument executed or Award granted pursuant thereto shall confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted (or in any other capacity) or shall affect the right of the Company or an Affiliate to terminate (a) the employment of an Employee or the service of a Consultant, in either case with or without notice and with or without Cause or (b) the service of a Director pursuant to the Bylaws of the Company or Applicable Laws.

10.4 **Freedom to Approve Acquisitions, Etc**. The grant of Awards shall in no way affect the right of the Company to effect a Change in Control or a Business Combination or to otherwise adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets; the Board and the Company shall incur no liability to Participants by approving or effecting such a transaction.

10.5 **Transfer; Approved Leave of Absence**. For purposes of the Plan, no termination of employment or of Continuous Service by an Employee shall be deemed to result from either (a) a transfer to the employment of the Company from an Affiliate or from the Company to an Affiliate, or from one Affiliate to another, or (b) an approved leave of absence for military service or sickness, or for any other purpose approved by the

Company, if the Employee's right to reemployment is guaranteed either by a statute or by contract or under the express written terms of the policy pursuant to which the leave of absence was granted or if the Committee otherwise so provides in writing, in either case, except to the extent inconsistent with Section 409A if the applicable Award is subject thereto.

11. **Adjustments upon Changes in Stock.** In the event of changes in the outstanding Common Stock or in the capital structure of the Company by reason of any stock or extraordinary cash dividend, stock split, reverse stock split, an extraordinary corporate transaction such as any recapitalization, reorganization, merger by which the Company is (either by direct merger or reverse triangular merger) acquired, consolidation, combination, exchange, or other relevant change in capitalization occurring after the Grant Date of any Award, Awards granted under the Plan and any Award Agreements, the exercise price of Options and Stock Appreciation Rights, the maximum number of shares of Common Stock subject to all Awards stated in Section 4 (including Sections 4.1 and 4.5), the maximum number of shares of Common Stock which can be issued pursuant to Incentive Stock Options stated in Section 4 and the maximum number of shares of Common Stock with respect to which any one person may be granted Awards during any period stated in Section 4 and Section 7.3(d)(vi) will be equitably adjusted or substituted, as to the number, price or kind of a share of Common Stock or other consideration subject to such Awards to the extent necessary to preserve as near as may be (but not to increase) the economic intent of such Award consistent with the purpose of such transaction. In the case of adjustments made pursuant to this Section 11, unless the Committee specifically determines that such adjustment is in the best interests of the Company, the Committee shall, in the case of Incentive Stock Options, seek to ensure that any adjustments under this Section 11 will not constitute a modification, extension or renewal of the Incentive Stock Options within the meaning of Section 424(h)(3) of the Code and in the case of Non-qualified Stock Options, seek to ensure that any adjustments under this Section 11 will not constitute a modification of such Non-qualified Stock Options within the meaning of Section 409A. Any adjustments made under this Section 11 shall be made in a manner which does not adversely affect the exemption provided pursuant to Rule 16b-3. The Company shall give each Participant notice of an adjustment hereunder and, upon notice, such adjustment shall be conclusive and binding for all purposes. By way of example, and without limitation: if the Company is acquired by merger for cash, all Options exercisable after such merger shall entitle the Optionholder to receive, upon exercise, cash (equal to the per-share cash merger price) and nothing else.

12. **Effect of Change in Control.**

12.1 **Double Trigger: Foreshortening**. Notwithstanding any provision of the Plan to the contrary:

12.1.a In the event of a Participant's termination of Continuous Service without Cause or for Good Reason (but excluding termination as a result of resignation in the absence of Good Reason) during the 10-day period before a Change in Control or during the 12-month period following a Change in Control, notwithstanding any provision of the Plan or any applicable Award Agreement to the contrary, all Options and Stock Appreciation Rights shall become immediately exercisable with respect to 100% of the shares subject to such Options or Stock Appreciation Rights, and/or the Restricted Period shall expire immediately with respect to 100% of the shares of Restricted Stock or Restricted Stock Units as of the date of the Participant's termination of Continuous Service.

12.1.b With respect to Performance Compensation Awards, in the event of a Change in Control, all incomplete Performance Periods in respect of such Award in effect on the date the Change in Control occurs shall end on the date of such change and the Committee shall (i) determine the extent to which Performance Goals with respect to each such Performance Period have been met based upon such audited or unaudited financial information then available as it deems relevant and (ii) cause to be paid to the applicable Participant partial or full Awards with respect to Performance Goals for each such Performance Period based upon the Committee's determination of the degree of attainment of Performance Goals or, if not determinable, assuming that the applicable "target" levels of performance have been attained, or on such other basis determined by the Committee.

To the extent practicable, any actions taken by the Committee under the immediately preceding clauses (a) and (b) shall occur in a manner and at a time which allows affected Participants the ability to participate in the Change in Control with respect to the shares of Common Stock subject to their Awards.

12.2 **Acceleration and Termination**. In addition, in the event of a Change in Control in which the surviving corporation or acquiring corporation (or its parent company) does not assume or continue outstanding Awards or substitute similar stock awards for such outstanding Awards, then the Committee may in its discretion and upon at least 10 days' advance notice to the affected persons, accelerate the vesting (and exercisability, as applicable) of outstanding Awards in full or in part to a date prior to the effective time of the Change in Control and, to the extent not exercised (if applicable) at or prior to the effective time of the Change in Control, cancel all outstanding Awards upon or immediately before the Change in Control (but subject to the condition that the Change in Control actually occur) and pay to the holders of such cancelled Awards, in cash or stock, or any combination thereof, the value of such Awards (including, at the discretion of the Committee, any unvested portion of the Award) immediately prior to cancellation based upon the value per share of Common Stock received or to be received or deemed received by other stockholders of the Company in the event. In the case of any Option or Stock Appreciation Right with an exercise price that equals or exceeds the price paid for a share of Common Stock in connection with the Change in Control, the Committee may cancel the Option or Stock Appreciation Right without the payment of consideration therefor.

12.3. **Variations**. The Committee may in its discretion treat differently any Awards or Participants in connection with a Change in Control, either in the terms of the initial Award Agreements or in any actions taken by the Committee after the Grant Date.

12.4. **Successors**. The obligations of the Company under the Plan shall be binding upon any successor corporation or organization resulting from the merger, consolidation or other reorganization of the Company, or upon any successor corporation or organization succeeding to all or substantially all of the assets and business of the Company and its Affiliates, taken as a whole.

13. **Amendment of the Plan and Awards.**

13.1 **Amendment of Plan**. The Board at any time, and from time to time, may amend or terminate the Plan. However, except as provided in Section 11 relating to adjustments upon changes in Common Stock and Section 13.3, no amendment shall be effective unless approved by the stockholders of the Company to the extent stockholder approval is necessary to satisfy any Applicable Laws. At the time of such amendment, the Board shall determine, upon advice from counsel, whether such amendment will be contingent on stockholder approval. All provided, that that if the only Applicable Law which stockholder approval is necessary to satisfy pertains to Incentive Stock Options but not to any other Awards, such amendment shall be effective immediately as to all types of Awards other than Incentive Stock Options upon Board approval; but shall additionally become effective as to Incentive Stock Options upon stockholder approval and not before.

13.2 **Stockholder Approval**. The Board may, in its sole discretion, submit any other amendment to the Plan for stockholder approval.

13.3 **Contemplated Amendments**. It is expressly contemplated that the Board may amend the Plan in any respect the Board deems necessary or advisable to provide eligible Employees, Consultants and Directors with the maximum benefits provided or to be provided under the provisions of the Code and the regulations promulgated thereunder relating to Incentive Stock Options or to the nonqualified deferred compensation provisions of Section 409A and/or to bring the Plan and/or Awards granted under it into compliance therewith.

13.4 **No Impairment of Rights**. Rights under any Award granted before amendment of the Plan shall not be impaired by any amendment of the Plan unless (a) the Company requests the consent of the Participant and (b) the Participant consents in writing.

13.5 **Amendment of Awards**. The Committee at any time, and from time to time, may amend the terms of any one or more Awards; *provided*, *however*, that the Committee may not affect any amendment which would otherwise constitute an impairment of the rights under any Award unless (a) the Company requests the consent of the Participant and (b) the Participant consents in writing.

14. **General Provisions.**

14.1 **Forfeiture Events**. The Committee may specify in an Award Agreement that the Participant's rights, payments and benefits with respect to an Award shall be subject to reduction, cancellation, forfeiture or recoupment upon the occurrence of certain events, in addition to applicable vesting conditions of an Award. Such events may include, without limitation, breach of non-competition, non-solicitation, confidentiality, or other restrictive covenants that are valid under Applicable Laws and are contained in the Award Agreement or otherwise applicable to the Participant, a termination of the Participant's Continuous Service for Cause, or other conduct by the Participant that is or is intended to be detrimental to the business or reputation of the Company and/or its Affiliates.

14.2 **Clawback**. Notwithstanding any other provisions in this Plan, any Award which is subject to recovery under any law, government regulation or securities exchange listing requirement, will be subject to such deductions and clawback as may be required to be made pursuant to such law, government regulation or securities exchange listing requirement (or any policy adopted by the Company pursuant to any such law, government regulation or securities exchange listing requirement).

14.3 **Other Compensation Arrangements**. Nothing contained in this Plan shall prevent the Board from adopting other or additional compensation arrangements, subject to stockholder approval if such approval is required; and such arrangements may be either generally applicable or applicable only in specific cases.

14.4 **Sub-plans**. The Committee may from time to time establish sub-plans under the Plan for purposes of satisfying blue sky, securities, tax or other laws of various jurisdictions in which the Company intends to grant Awards. Any sub-plans shall contain such limitations and other terms and conditions as the Committee determines are necessary or desirable. All sub-plans shall be deemed a part of the Plan, but each sub-plan shall apply only to the Participants in the jurisdiction for which the sub-plan was designed.

14.5 **Unfunded Plan**. The Plan shall be unfunded. Neither the Company, the Board nor the Committee shall be required to establish any special or separate fund or to segregate any assets to assure the performance of its obligations under the Plan.

14.6 **Benefits Not Alienable**. Other than as provided above or in an Award Agreement, benefits under this Plan or the Award Agreement may not be sold, assigned, transferred or otherwise disposed of or alienated, whether voluntarily or involuntarily, nor be pledged or hypothecated as collateral for a loan or as security for the performance of any obligation or for any other purpose. Any unauthorized attempt at assignment, transfer, pledge or other disposition shall be without effect.

14.7 **Delivery**. Upon exercise of a right granted under this Plan, the Company shall issue Common Stock or pay any amounts due within a reasonable period of time thereafter. Subject to any statutory or regulatory obligations the Company may otherwise have, for purposes of this Plan, 20 days shall be considered a reasonable period of time.

14.8 **No Fractional Shares**. No fractional shares of Common Stock shall be issued or delivered pursuant to the Plan. The Committee shall determine whether cash, additional Awards or other securities or property shall be issued or paid in lieu of fractional shares of Common Stock or whether any fractional shares should be rounded, forfeited or otherwise eliminated.

14.9 **Other Provisions**. The Award Agreements authorized under the Plan may contain such other provisions not inconsistent with this Plan, including, without limitation, restrictions upon the exercise of the Awards, as the Committee may deem advisable.

14.10 **Section 409A**. (a) The Plan is intended to comply with the requirements of Section 409A to the extent subject thereto, and, accordingly, to the maximum extent permitted, the Plan shall be interpreted and administered to be in compliance therewith. Any payments described in the Plan or any Award Agreement that are due within the "short-term deferral period" as defined in Section 409A shall not be treated as

deferred compensation unless Applicable Laws require otherwise. Notwithstanding anything to the contrary in the Plan or any Award Agreement, to the extent required to avoid accelerated taxation and tax penalties under Section 409A, amounts that would otherwise be payable and benefits that would otherwise be provided pursuant to the Plan or any Award Agreement during the six month period immediately following the Participant's termination of Continuous Service shall instead be paid in one lump sum on the first payroll date after the six-month anniversary of the Participant's separation from service (or the Participant's death, if earlier).

14.10.a Unless the Committee expresses a conscious and knowing intention to the contrary in the particular instance, all Award Agreements shall be deemed to be intended either to be exempt from the application of or to comply with the requirements of Section 409A to the extent subject thereto, and, accordingly, to the maximum extent permitted, each Award Agreement shall be interpreted and administered and each action of the Committee with respect thereto shall be interpreted such that grant, payment, settlement or deferral will not be subject to a penalty, tax or interest applicable under or as a result of Section 409A.

14.10.b Notwithstanding the foregoing, neither the Company nor the Committee shall have any obligation to take any action to prevent the assessment of any excise tax or penalty on any Participant under Section 409A and neither the Company nor the Committee will have any liability to, or obligation to indemnify or reimburse, any Participant for such tax or penalty.

14.11 **Disqualifying Dispositions**. Any Participant who shall make a "disposition" (as defined in Section 424 of the Code) of all or any portion of shares of Common Stock acquired upon exercise of an Incentive Stock Option within two years from the Grant Date of such Incentive Stock Option or within one year after the issuance of the shares of Common Stock acquired upon exercise of such Incentive Stock Option (a "***Disqualifying Disposition***") shall be required to immediately advise the Company in writing as to the occurrence of the sale and the price realized upon the sale of such shares of Common Stock.

14.12 **Section 16**. It is the intent of the Company that the Plan satisfy, and be interpreted in a manner that satisfies, the applicable requirements of Rule 16b-3 so that Participants will be entitled to the benefit of Rule 16b-3, or any other rule promulgated under Section 16 of the Exchange Act, so as not to become subject to short-swing liability under Section 16 of the Exchange Act. Accordingly, if the operation of any provision of the Plan would conflict with the intent expressed in this Section 14.12, such provision to the extent possible shall be interpreted and/or deemed amended so as to avoid such conflict.

14.13 **[Reserved**.]

14.14 **Expenses**. The costs of administering the Plan shall be paid by the Company.

14.15 **Annual Reports**. During the term of this Plan, to the extent required by Applicable Law the Company shall furnish to each Participant who does not otherwise receive such materials, copies of all reports, proxy statements and other communications that the Company distributes generally to its stockholders.

14.16 **Severability**. If any of the provisions of the Plan or any Award Agreement is held to be invalid, illegal or unenforceable, whether in whole or in part, such provision shall be deemed modified to the extent, but only to the extent, of such invalidity, illegality or unenforceability and the remaining provisions shall not be affected thereby.

14.17 **Plan Headings**. The headings in the Plan are for purposes of convenience only and are not intended to define or limit the construction of the provisions hereof.

14.18 **Non-Uniform Treatment**. The Committee's determinations under the Plan and in connection with any respective Award Agreements need not be uniform and may be made by it selectively among persons who are eligible to receive, or actually receive, Awards. Without limiting the generality of the foregoing,

the Committee shall be entitled to make non-uniform and selective determinations, amendments and adjustments, and to enter into non-uniform and selective Award Agreements.

15. **Effective Date of Plan**. The Plan shall become effective as of the Effective Date, but no Award shall be exercised (or, in the case of a stock Award, shall be granted) unless and until the Plan has been approved by the stockholders of the Company, which approval shall be within 12 months before or after the date the Plan is adopted by the Board.

16. **Termination or Suspension of the Plan**. The Committee may suspend or terminate the Plan at any time. No Incentive Stock Options may be granted after the tenth anniversary of May 7, 2018, the date the Plan, as amended and restated, was adopted by the Board. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated, but Awards granted prior to any suspension or termination may extend beyond such suspension or termination.

17. **Choice of Law**. The law of the State of Delaware shall govern all questions concerning the construction, validity and interpretation of this Plan, without regard to such state's conflict of law rules.

FORM OF NOTICE OF STOCK OPTION GRANT

You have been granted an option (the "Option") to purchase Common Stock of Biocept, Inc. (the "Company") under the Company's 2013 Amended and Restated Equity Incentive Plan, as follows:

Optionee:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Expiration Date:	_____

Type of Grant: ☐ Incentive Stock Option ☐ Nonstatutory Stock Option

Vesting Schedule: _____ of the shares shall vest and be exercisable on the Vesting Commencement Date; thereafter _____ of the total shares shall, provided that you remain in Continuous Service through the respective installment dates, vest and become exercisable in equal monthly installments over the next _____ years so that the option would be 100% vested on the _____ anniversary of the Vesting Commencement Date. Notwithstanding the foregoing, the Option is subject to potential accelerated vesting as set forth in Section 12.1 of the Plan.

[ADD IF APPLICABLE: In addition, if during the term of this Options there is a Change in Control in which the surviving corporation or acquiring corporation (or its parent company) does not assume or continue this Option or substitute similar stock awards for this Option, then provided that you are still in Continuous Service as of immediately prior to such Change in Control, any not-yet-vested shares shall subject to this Option vest and become exercisable immediately prior to such Change in Control.]

Termination Period: To the extent allowed by Section 5 of the Stock Option Agreement and not otherwise (and in no event later than the Expiration Date), this Option may still be exercised for three months after termination of Optionee's Continuous Service or for such other time period as called for by such Section 5 for a particular scenario. Optionee is responsible for keeping track of the applicable exercise period, if any, following termination for any reason of his or her Continuous Service. The Company will not provide further notice of such exercise period, if any.

By your signature and the signature of the Company's representative below, you and the Company agree that this Option is granted under and governed by the terms and conditions of the Company's 2013 Amended and Restated Equity Incentive Plan and the Stock Option Agreement, both of which are attached and made a part of this document. Accordingly, separate execution and delivery of the Stock Option Agreement is not required.

In addition, you agree and acknowledge that your rights to any shares underlying the Option will be earned only as you provide Continuous Services over time, that the grant of the Option is not as consideration for services you rendered to the Company before your Vesting Commencement Date, and that nothing in this Notice or the attached documents confers upon you any right to continue your employment or consulting relationship with the Company for any period of time, nor does it interfere in any way with your right or the Company's right to terminate that relationship at any time, for any reason, with or without Cause.

The per share "Exercise Price" is intended to be at least equal to the fair market value of the Company's Common Stock at the date of grant. The Company has attempted in good faith to make the fair market value determination in compliance with applicable tax law although there can be no certainty that the IRS will agree. If the IRS does not agree and asserts the fair market value at the time of grant is higher than the Exercise Price, the IRS could seek to impose greater taxes on you, including interest and penalties under Internal Revenue Code Section 409A. While the Company thinks this is an unlikely event, the Company cannot provide absolute assurance and you may want to consult your own tax adviser with any questions.

BIOCEPT, INC.

By:
Optionee Name:
Title:

ATTACHMENTS: Stock Option Agreement, Exercise Notice and Stock Purchase Agreement, 2013 Amended and Restated Equity Incentive Plan

Biocept, Inc.

2013 Amended and Restated Equity Incentive Plan

FORM OF STOCK OPTION AGREEMENT

1. Grant of Option. Biocept, Inc., a Delaware corporation (the "Company"), hereby grants to _____ ("Optionee"), an option (the "Option") to purchase the total number of shares of Common Stock (the "Shares") set forth in the Notice of Stock Option Grant (the "Notice"), at the exercise price per Share set forth in the Notice (the "Exercise Price") subject to the terms, definitions and provisions of the Company's 2013 Amended and Restated Equity Incentive Plan (the "Plan") adopted by the Company, which is incorporated in this Agreement by reference. Unless otherwise defined in this Agreement, the terms used in this Agreement shall have the meanings defined in the Plan or in the Notice.

2. Designation of Option. This Option is intended to be an Incentive Stock Option as defined in Section 422 of the Code only to the extent so designated in the Notice, and to the extent it is not so designated or to the extent the Option does not qualify as an Incentive Stock Option under Applicable Laws, then it is intended to be and will be treated as a Nonstatutory Stock Option. "Applicable Laws" means the legal requirements relating to the administration of stock option and restricted stock purchase plans, including under applicable U.S. state corporate laws, U.S. federal and applicable state securities laws, other U.S. federal and state laws, the Code, any stock exchange rules or regulations and the applicable laws, rules and regulations of any other country or jurisdiction where Options or other Awards are granted under the Plan, as such laws, rules, regulations and requirements shall be in place from time to time.

Notwithstanding the above, if designated as an Incentive Stock Option, in the event that the Shares subject to this Option (and all other Incentive Stock Options granted to Optionee by the Company or any Affiliate, including under other plans of the Company) that first become exercisable in any calendar year have an aggregate fair market value (determined for each Share as of the date of grant of the option covering such Share) in excess of $100,000, the Shares in excess of $100,000 shall be treated as subject to a Nonstatutory Stock Option, in accordance with Section 6.12 of the Plan.

3. Exercise of Option. This Option shall be exercisable during its term in accordance with the Vesting/Exercise Schedule set out in the Notice and with the provisions of the Plan, including Section 6 thereof, and of this Agreement, including Section 5 hereof, as follows:

(a) Right to Exercise.

(i) This Option may not be exercised for a fraction of a share.

(ii) In the event of Optionee's death, disability or other termination of Continuous Service, the exercisability of the Option is governed by Section 5 below, subject to the limitations contained in this Section 3.

(iii) In no event may this Option be exercised after the Expiration Date of the Option as set forth in the Notice.

(b) Method of Exercise.

(i) This Option shall be exercisable by execution and delivery of the Exercise Notice and Stock Purchase Agreement attached hereto as Exhibit A (the "Exercise Agreement") or of any other form of written notice approved for such purpose by the Company which shall state Optionee's election to exercise the Option, the number of Shares in respect of which the Option is being exercised, and such other representations and agreements as to the holder's investment intent with respect to such Shares as may be required by the Company pursuant to the provisions of the Plan. Such written notice shall be signed by Optionee and shall be delivered to the Company by such means as are determined by the Administrator in its discretion to constitute adequate delivery. The written notice shall

be accompanied by payment of the Exercise Price. This Option shall be deemed to be exercised upon receipt by the Company of such written notice accompanied by the Exercise Price.

(ii) As a condition to the exercise of this Option and as further set forth in Section 8.2 of the Plan, Optionee agrees to make such arrangements as the Administrator may require for the satisfaction of all federal, state or other tax withholding obligations, if any, which arise upon the vesting or exercise of the Option, or disposition of Shares, whether by withholding, direct payment to the Company, or otherwise, as the Administrator may in its discretion determine.

(iii) The Company is not obligated, and will have no liability for failure, to issue or deliver any Shares upon exercise of the Option unless such issuance or delivery would comply with the Applicable Laws, with such compliance determined by the Company in consultation with its legal counsel. As a condition to the exercise of this Option, the Company may require Optionee to make any representation and warranty to the Company as may be required by the Applicable Laws. Assuming such compliance, for income tax purposes the Shares shall be considered transferred to Optionee on the date on which the Option is exercised with respect to such Shares.

4. **Method of Payment.** Payment of the Exercise Price shall be by any of the following, or a combination of the following, at the election of Optionee:

(a) cash or check delivered on and dated no later than the date of exercise; or

(b) if the Company (in its sole discretion, at the time) is at such time permitting "same day sale" cashless brokered exercises, delivery of a properly executed exercise notice together with irrevocable instructions to a broker participating in such cashless brokered exercise program to deliver promptly to the Company the amount required to pay the exercise price (and applicable withholding taxes); or

(c) if the Notice expressly authorizes Optionee to use the net-exercise method, delivery of a properly executed net-exercise notice on a form provided by the Company.

5. **Termination of Relationship; Early Termination of Option.** Following the date of cessation of Optionee's Continuous Service for any reason (the "Termination Date"), Optionee may exercise the Option only as set forth in the Notice and this Section 5. To the extent that Optionee is not entitled to exercise this Option as of the Termination Date, or if Optionee is not allowed to exercise this Option during the Termination Period set forth in the Notice, or if Optionee does not exercise this Option within the Termination Period set forth in the Notice or the termination periods set forth below, the Option shall terminate in its entirety. In no event may any Option be exercised after the Expiration Date of the Option as set forth in the Notice.

(a) **Termination.** In the event of termination of Optionee's Continuous Service other than as a result of Optionee's disability or death or for Cause (as defined in the Plan), Optionee may, to the extent Optionee is vested in the Option Shares at the Termination Date, exercise this Option during the Termination Period set forth in the Notice.

(b) **Other Terminations of Relationship.** In connection with any termination other than a termination covered by Section 5(a), Optionee may exercise the Option only as described below:

(i) **Termination upon Disability of Optionee.** In the event of termination of Optionee's Continuous Service as a result of Optionee's disability, Optionee may, but only within twelve months from the Termination Date, exercise this Option to the extent Optionee was vested in the Option Shares as of such Termination Date.

(ii) **Death of Optionee.** In the event of the death of Optionee (a) during the term of this Option and while an employee (including officers) or Director of, or consultant or advisor to, either the Company or an Affiliate and having been in Continuous Service since the date of grant of the Option, or (b) within three months after Optionee's Termination Date (but only if such cessation of services was not as a result of voluntary termination by the Optionee or for Cause), the Option may be exercised at any time within twelve months following the date of

death by Optionee's estate or by a person who acquired the right to exercise the Option by bequest or inheritance, but only to the extent Optionee was vested in the Option as of the Termination Date.

(iii) Termination for Cause. In the event Optionee's Continuous Service is terminated for Cause, the Option shall terminate immediately upon such termination for Cause as set forth in Section 6.8 of the Plan. In the event Optionee's employment or consulting relationship with the Company is suspended pending investigation of whether such relationship shall be terminated for Cause, all Optionee's rights under the Option, including the right to exercise the Option, shall be suspended during the investigation period. The Administrator shall have authority to effect such procedures and take such actions as are necessary to carry out the legal intent of this Section 5(b)(iii), including such procedures and actions as are required to cause Optionee to return to the Company Shares purchased under the Option that have been purchased or that vested within six months of the events giving rise to the for-Cause termination of Optionee's Continuous Service and, if such Shares have been transferred by the Optionee, to remit to the Company the value of such transferred Shares.

(c) Termination of Option. This Option may terminate before its Expiration Date and before the dates specified under Section 5(a) and (b) above under certain circumstances as set forth in Section 12.2 of the Plan.

6. Non-Transferability of Option. Except as otherwise set forth in the Notice, this Option may not be transferred in any manner otherwise than by will or by the laws of descent or distribution or pursuant to qualified domestic relations orders under Applicable Laws and may be exercised during the lifetime of Optionee only by him or her. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of Optionee.

7. Tax Consequences.

(a) The Company has not provided any tax advice with respect to this Option or the disposition of the Shares. Optionee should obtain advice from an appropriate independent professional adviser with respect to the taxation implications of the grant, exercise, vesting, assignment, release, cancellation or any other disposal of this Option (each, a "Trigger Event") and on any subsequent sale or disposition of the Shares. Optionee should also take advice in respect of the taxation indemnity provisions under Section 8 below. The per share Exercise Price of the Option is intended to be at least equal to the fair market value of the Company's Common Stock at the date of grant. The Company has attempted in good faith to make the fair market value determination in compliance with applicable tax law although there can be no certainty that the IRS will agree. If the IRS does not agree and asserts the fair market value at the time of grant is higher than the Exercise Price, the IRS could seek to impose greater taxes on Optionee, including interest and penalties under Internal Revenue Code Section 409A; but Optionee absolves and releases the Company and its directors from any claims should there be any such taxes, interest or penalties.

(b) If any payment or benefit Optionee will or may receive from the Company or otherwise (a "280G Payment") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "Excise Tax"), then any such 280G Payment (a "Payment") shall be equal to the Reduced Amount. The "Reduced Amount" shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Optionee's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the "Reduction Method") that results in the greatest economic benefit for Optionee. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata.

Unless Optionee and the Company agree on an alternative accounting firm or law firm, the accounting firm engaged by the Company for general tax compliance purposes as of the day prior to the effective date of the Change in Control shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company

shall appoint a nationally recognized accounting or law firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations by such accounting or law firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting or law firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to Optionee and the Company within 15 calendar days after the date on which Optionee's right to a 280G Payment becomes reasonably likely to occur (if requested at that time by Optionee or the Company) or such other time as requested by Optionee or the Company.

If Optionee receives a Payment for which the Reduced Amount was determined pursuant to clause (x) of this Section and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, Optionee agrees to promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) of this Section) so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) or clause (x) of this Section, Optionee shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

8. Optionee's Taxation Indemnity.

(a) To the extent permitted by law, Optionee hereby agrees to indemnify and keep indemnified the Company and the Company as trustee for and on behalf of any affiliate entity, in respect of any liability or obligation of the Company and/or any affiliate entity to account for income tax or any other taxation provisions under the laws of Optionee's country or citizenship and/or residence to the extent arising from a Trigger Event or arising out of the acquisition, retention and disposal of the Shares.

(b) The Company shall not be obliged to allot and issue any of the Shares or any interest in the Shares unless and until Optionee has paid to the Company such sum as is, in the opinion of the Company, sufficient to indemnify the Company in full against any liability the Company has for any amount of, or representing, income tax or any other tax arising from a Trigger Event (the "Option Tax Liability"), or Optionee has made such other arrangement as in the opinion of the Company will ensure that the full amount of any Option Tax Liability will be recovered from Optionee within such period as the Company may then determine.

9. Data Protection.

(a) To facilitate the administration of the Plan and this Agreement, it will be necessary for the Company (or its payroll administrators) to collect, hold and process certain personal information about Optionee and to transfer this data to certain third parties such as brokers with whom Optionee may elect to deposit any share capital under the Plan. Optionee consents to the Company (or its payroll administrators) collecting, holding and processing Optionee's personal data and transferring this data to the Company or any other third parties insofar as is reasonably necessary to implement, administer and manage the Plan.

(b) Optionee understands that Optionee may, at any time, view Optionee's personal data, require any necessary corrections to it or withdraw the consents herein in writing by contacting the Company, but acknowledges that without the use of such data it may not be practicable for the Company to administer Optionee's involvement in the Plan in a timely fashion or at all and this may be detrimental to Optionee.

10. Governing Law. This Agreement and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of Delaware, without giving effect to principles of conflicts of law.

11. Effect of Agreement. Optionee acknowledges receipt of a copy of the Plan and represents that he or she is familiar with the terms and provisions thereof (and has had an opportunity to consult counsel regarding the Option terms), and hereby accepts this Option and agrees to be bound by its contractual terms as set forth herein and in the Plan. Optionee hereby agrees to accept as binding, conclusive and final all decisions and interpretations of the Administrator regarding any questions relating to the Option. In the event of a conflict between the terms and provisions of the Plan and the terms and provisions of the Notice and this Agreement, the Plan terms and provisions shall prevail. The Option, including the Plan, constitutes the entire agreement between Optionee and the Company on the subject matter hereof and supersedes all proposals, written or oral, and all other communications between the parties relating to such subject matter.

EXHIBIT A

Biocept, Inc.

2013 Amended and Restated Equity Incentive Plan

FORM OF EXERCISE NOTICE AND STOCK PURCHASE AGREEMENT

This Agreement ("Agreement") is made as of _____, by and between Biocept, Inc., a Delaware corporation (the "Company"), and _____ ("Purchaser"). To the extent any capitalized terms used in this Agreement are not defined, they shall have the meaning ascribed to them in the Company's 2013 Amended and Restated Equity Incentive Plan (the "Plan").

1. Exercise of Option. Subject to the terms and conditions hereof, Purchaser hereby elects to exercise his or her option to purchase _____ shares of the Common Stock (the "Shares") of the Company under and pursuant to the Plan and the Stock Option Agreement granted _____, _____ (the "Option Agreement"). The purchase price for the Shares shall be $_____ per Share for a total purchase price of $_____. The term "Shares" refers to the purchased Shares and all securities received in replacement of the Shares or as stock dividends or splits, all securities received in replacement of the Shares in a recapitalization, merger, reorganization, exchange or the like, and all new, substituted or additional securities or other properties to which Purchaser is entitled by reason of Purchaser's ownership of the Shares.

2. Time and Place of Exercise. The purchase and sale of the Shares under this Agreement shall occur at the principal office of the Company simultaneously with the execution and delivery of this Agreement subject to the conditions stated in and the other provisions of the Option Agreement, including Section 3(b) thereof. On or forthwith after such date, the Company will deliver to Purchaser a certificate representing the Shares to be purchased by Purchaser (which shall be issued in Purchaser's name) against payment of the exercise price therefor on such date by Purchaser by any method listed in Section 4 of the Option Agreement.

3. Limitations on Transfer. In addition to any other limitation on transfer created by applicable securities laws, Purchaser shall not assign, encumber or dispose of any interest in the Shares except in compliance with the provisions below and applicable securities laws.

4. Repurchase Option on Termination For Cause. Purchaser acknowledges that in the event of termination of Purchaser's Continuous Service for Cause, the Administrator shall have authority to effect such procedures and take such actions as are necessary to carry out the legal intent of Section 9(b)(iv) of the Option Agreement, including such procedures and actions as are required to cause Purchaser to return to the Company Shares purchased under the Option that have been purchased or that vested within six months of the events giving rise to the for-Cause termination of Purchaser's Continuous Service and, if such Shares have been transferred by the Purchaser, to remit to the Company the value of such transferred Shares.

5. Investment and Taxation Representations. In connection with the purchase of the Shares, Purchaser represents to the Company the following (provided, that the representation in subsections (b), (c), (d), (e) and (f) shall be applicable if and only if the Shares are not registered under the Securities Act on Form S-8):

(a) Purchaser is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Shares.

(b) Purchaser is purchasing these securities for investment for his or her own account only and not with a view to, or for resale in connection with, any "distribution" thereof within the meaning of the Securities Act or under any applicable provision of state law. Purchaser does not have any present intention to transfer the Shares to any person or entity.

(c) Purchaser understands that the Shares have not been registered under the Securities Act by reason of a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Purchaser's investment intent as expressed herein.

(d) Purchaser further acknowledges and understands that the securities must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. Purchaser further acknowledges and understands that the Company is under no obligation to register the securities. Purchaser understands that the certificate(s) evidencing the securities will be imprinted with a legend which prohibits the transfer of the securities unless they are registered or such registration is not required in the opinion of counsel for the Company.

(e) Purchaser is familiar with the provisions of Rule 144 promulgated under the Securities Act, which, in substance, permit limited public resale of "restricted securities" acquired, directly or indirectly, from the issuer of the securities (or from an affiliate of such issuer), in a non-public offering subject to the satisfaction of certain conditions. Purchaser understands that the Company provides no assurances as to whether he or she will be able to resell any or all of the Shares pursuant to Rule 144, which rule requires, among other things, that the Company be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, that resales of securities take place only after the holder of the Shares has held the Shares for certain specified time periods, and under certain circumstances, that resales of securities be limited in volume and take place only pursuant to brokered transactions. Notwithstanding this paragraph (e), Purchaser acknowledges and agrees to the restrictions set forth in paragraph (f) below.

(f) Purchaser further understands that in the event all of the applicable requirements of Rule 144 are not satisfied, registration under the Securities Act, compliance with Regulation A, or some other registration exemption will be required; and that, notwithstanding the fact that Rule 144 is not exclusive, the Staff of the Securities and Exchange Commission has expressed its opinion that persons proposing to sell private placement securities other than in a registered offering and otherwise than pursuant to Rule 144 will have a substantial burden of proof in establishing that an exemption from registration is available for such offers or sales, and that such persons and their respective brokers who participate in such transactions do so at their own risk.

(g) Purchaser understands that Purchaser may suffer adverse tax consequences as a result of Purchaser's purchase or disposition of the Shares. Purchaser represents that Purchaser has consulted any tax consultants Purchaser deems advisable in connection with the purchase or disposition of the Shares and that Purchaser is not relying on the Company for any tax advice.

(h) Purchaser understands that the per share "Exercise Price" for the Shares is intended to be at least equal to the fair market value of the Company's Common Stock at the date of grant and that the Company has attempted in good faith to make the fair market value determination in compliance with applicable tax law although there can be no certainty that the IRS will agree. Purchaser understands that if the IRS does not agree and asserts that the fair market value at the time of grant is higher than the Exercise Price, the IRS could seek to impose greater taxes on Purchaser, including interest and penalties under Internal Revenue Code Section 409A; but Purchaser absolves and releases the Company and its directors from any claims should there be any such taxes, interest or penalties.

6. Restrictive Legends and Stop-Transfer Orders.

(a) Legends. If the Shares have not been registered under the Securities Act on Form S-8, the certificate or certificates representing the Shares shall bear the following legend (as well as any legends required by applicable state and federal corporate and securities laws):

> THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED UNLESS EFFECTED PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR UNDER ANOTHER EXEMPTION AVAILABLE UNDER THE SECURITIES ACT OF 1933 (AS

TO WHICH AVAILABILITY THE COMPANY MAY REQUIRE THE SELLER/TRANSFEROR TO PROVIDE AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY).

(b) **Stop-Transfer Notices.** Purchaser agrees that, in order to ensure compliance with the restrictions referred to herein, the Company may issue appropriate "stop transfer" instructions to its transfer agent, if any, and that, if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

(c) **Refusal to Transfer.** The Company shall not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares shall have been so transferred.

7. **No Employment Rights.** Nothing in this Agreement shall affect in any manner whatsoever the right or power of the Company, or a parent or subsidiary of the Company, to terminate Purchaser's employment or consulting relationship, for any reason, with or without Cause.

8. **Tax Consequences.** Purchaser should obtain advice from an appropriate independent professional adviser with respect to the taxation implications of the grant, issuance, purchase, retention, assignment, release, cancellation, sale or any other disposal of the Shares (each, a "Trigger Event"). Participant should also take advice in respect of the taxation indemnity provisions under Section 9 below.

9. **Purchaser's Taxation Indemnity.**

(a) To the extent permitted by law, Purchaser hereby agrees to indemnify and keep indemnified the Company and the Company as trustee for and on behalf of any affiliate entity, in respect of any liability or obligation of the Company and/or any affiliate entity to account for income tax or any other taxation provisions under the laws of Purchaser's country or citizenship and/or residence to the extent arising from a Trigger Event.

(b) The Company shall not be obliged to allot and issue any of the Shares or any interest in the Shares unless and until Purchaser has paid to the Company such sum as is, in the opinion of the Company, sufficient to indemnify the Company in full against any liability the Company has for any amount of, or representing, income tax or any other tax arising from a Trigger Event (the "Shares Tax Liability"), or Purchaser has made such other arrangement as in the opinion of the Company will ensure that the full amount of any Shares Tax Liability will be recovered from Purchaser within such period as the Company may then determine.

10. **Data Protection.**

(a) To facilitate the administration of the Plan and this Agreement, it will be necessary for the Company (or its payroll administrators) to collect, hold and process certain personal information about Purchaser and to transfer this data to certain third parties such as brokers with whom Purchaser may elect to deposit any share capital under the Plan. Purchaser consents to the Company (or its payroll administrators) collecting, holding and processing Purchaser's personal data and transferring this data to the Company or any other third parties insofar as is reasonably necessary to implement, administer and manage the Plan.

(b) Purchaser understands that Purchaser may, at any time, view Purchaser's personal data, require any necessary corrections to it or withdraw the consents herein in writing by contacting the Company, but acknowledges that without the use of such data it may not be practicable for the Company to administer Purchaser's involvement in the Plan in a timely fashion or at all and this may be detrimental to Purchaser.

11. Miscellaneous.

(a) Governing Law. This Agreement and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of Delaware, without giving effect to principles of conflicts of law.

(b) Entire Agreement; Enforcement of Rights. This Agreement sets forth the entire agreement and understanding of the parties relating to the subject matter herein and merges all prior discussions between them. No modification of or amendment to this Agreement, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties to this Agreement. The failure by either party to enforce any rights under this Agreement shall not be construed as a waiver of any rights of such party.

(c) Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement, (ii) the balance of the Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of the Agreement shall be enforceable in accordance with its terms.

(d) Notices. Any notice required or permitted by this Agreement shall be in writing and shall be deemed sufficient when delivered personally or sent by email or fax or forty-eight (48) hours after being deposited in the U.S. mail, as certified or registered mail, with postage prepaid, and addressed to the party to be notified at such party's address as set forth below or as subsequently modified by written notice.

(e) Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument.

(f) Successors and Assigns. The rights and benefits of this Agreement shall inure to the benefit of, and be enforceable by the Company's successors and assigns. The rights and obligations of Purchaser under this Agreement may only be assigned with the prior written consent of the Company.

[Signature Page Follows]

The parties have executed this Exercise Notice and Stock Purchase Agreement as of the date first set forth above.

COMPANY:

BIOCEPT, INC.

By:

Name:

Title:

PURCHASER:

(Signature)

(Printed Name)

Address:

RECEIPT

The undersigned hereby acknowledges receipt of Certificate No. ____ for _____ shares of Common Stock of Biocept, Inc.

Dated:

Purchaser

RECEIPT

Biocept, Inc. (the "Company") hereby acknowledges receipt of check in the amount of $_____ given by _____ as consideration for Certificate No. _____ for _____ shares of Common Stock of the Company.

Dated:

BIOCEPT, INC.

By:

Name:

Title:

FORM OF RESTRICTED STOCK UNIT AGREEMENT

This Restricted Stock Unit Agreement (this "**Agreement**") is made and entered into as of [DATE] (the "**Grant Date**") by and between Biocept, Inc., a Delaware corporation (the "**Company**") and [NAME] (the "**Grantee**").

WHEREAS, the Company has adopted the Biocept, Inc. 2013 Amended and Restated Equity Incentive Plan, (the "**Plan**") pursuant to which awards of Restricted Stock Units may be granted; and

WHEREAS, the Committee (or the Board) has determined that it is in the best interests of the Company and its stockholders to grant the award of Restricted Stock Units provided for herein, and accordingly has so granted.

NOW, THEREFORE, the parties hereto, intending to be legally bound, agree as follows:

1. Grant of Restricted Stock Units.

1.1 Pursuant to Section 7.2 of the Plan, the Company hereby issues to the Grantee on the Grant Date an Award consisting of, in the aggregate, [NUMBER] Restricted Stock Units (the "**Restricted Stock Units**"). Each Restricted Stock Unit represents the right to receive one share of Common Stock, subject to the terms and conditions set forth in this Agreement and the Plan. Capitalized terms that are used but not defined herein have the meaning ascribed to them in the Plan.

1.2 The Restricted Stock Units shall be credited to the Grantee on the books and records of the Company. All amounts credited to the Grantee shall continue for all purposes to be part of the general assets of the Company.

2. Consideration. The grant of the Restricted Stock Units is made in consideration of the services to be rendered by the Grantee to the Company.

3. Vesting.

3.1 Except as otherwise provided herein, provided that the Grantee remains in Continuous Service through the applicable vesting date, the Restricted Stock Units will vest in accordance with the following schedule:

Vesting Date	**Number of Restricted Stock Units That Vest**
[VESTING DATE 1]	[NUMBER OR PERCENTAGE OF UNITS THAT VEST ON THE VESTING DATE]
[VESTING DATE 2]	[NUMBER OR PERCENTAGE OF UNITS THAT VEST ON THE VESTING DATE]

Once vested, the Restricted Stock Units become **"Vested Units."**

3.2 Except as provided in the next sentence, if the Grantee's Continuous Service terminates for any reason at any time before all of his or her Restricted Stock Units have vested, the Grantee's unvested Restricted Stock Units (except for unvested Restricted Stock Units which vest simultaneously with such termination) shall be automatically forfeited upon such termination of Continuous Service and neither the Company nor any Affiliate shall have any further obligations to the Grantee with respect to such unvested Restricted Stock Units.

The foregoing vesting schedule notwithstanding, if the Grantee's Continuous Service terminates under the circumstances and during the period as specified in Section 12.1(a) of the Plan pertaining to a "double trigger," or terminates as a result of the Grantee's death or Disability, then (subject to **Section 10.2**) 100% of the unvested Restricted Stock Units shall vest as of the date of such termination.

4. Restrictions. Subject to any exceptions set forth in this Agreement or the Plan, from the Grant Date until such time as the Restricted Stock Units are settled in accordance with **Section 6**, the Restricted Stock Units or the rights relating thereto may not be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by the Grantee. Any attempt to assign, alienate, pledge, attach, sell or otherwise transfer or encumber the Restricted Stock Units or the rights relating thereto shall be wholly ineffective and, if any such attempt is made, the Restricted Stock Units will be forfeited by the Grantee and all of the Grantee's rights to such units shall immediately terminate without any payment or consideration by the Company.

5. Rights as Stockholder.

5.1 The Grantee shall not have any rights of a stockholder with respect to the shares of Common Stock underlying the Restricted Stock Units unless and until and except to the extent that (a) such Restricted Stock Units have become Vested Units and (b) such Vested Units are settled by the issuance of shares of Common Stock.

5.2 Upon and following the settlement of the Vested Units, the Grantee shall be the record owner of the shares of Common Stock which had underlain the Vested Units unless and until such shares are sold or otherwise disposed of, and as record owner shall be entitled to all rights of a stockholder of the Company (including voting rights).

6. Settlement of Restricted Stock Units.

6.1 Subject to **Section 9** hereof, promptly following the Trigger Date, the Company shall (a) issue and deliver to the Grantee the number of shares of Common Stock equal to the number of Vested Units; and (b) enter the Grantee's name on the books of the Company as the stockholder of record with respect to the shares of Common Stock delivered to the Grantee. The "**Trigger Date**" means the earliest of (a) [DATE-CERTAIN TRIGGER DATE], (b) the date of a "double trigger" termination of Continuous Service under the circumstances and during the period as specified in Section 12.1(a) of the Plan (but only in the event that the Change in Control which is one of the triggers in such "double trigger" termination of Continuous Service is an event described in Section 409A(a)(2)(A)(v) of the Code and the regulations and other guidance promulgated thereunder and/or that such qualifying termination of Continuous Service which is the other trigger in such "double trigger" termination of Continuous Service is a "separation from service" as described in Section 409A(a)(2)(A)(i) of the Code and the regulations and other guidance promulgated thereunder), (c) the date the Grantee's Continuous Service terminates as a result of the Grantee's Disability (but only, in such case, in the event that such termination of Continuous Service is due to the Grantee becoming "disabled" as described in Section 409A(a)(2)(C) of the Code and the regulations and other guidance promulgated thereunder) or death, or (d) upon verification by the Committee as such and a determination by the Committee, as a matter of grace, to allow such to be a Trigger Date, the date of an unforeseeable emergency as described in Section 409A(a)(2)(A)(vi) of the Code and the regulations and other guidance promulgated thereunder, but only to the extent necessary to satisfy such emergency and to pay taxes reasonably anticipated as a result thereof after taking into account the extent to which such hardship is or may be relieved through reimbursement or compensation by insurance or otherwise or by liquidation of the Grantee's assets (to the extent the liquidation of such assets would not itself cause severe financial hardship) (determined in accordance with Section 409A(a)(2)(B)(ii)(II) of the Code and the regulations and other guidance promulgated thereunder).

6.2 If the Grantee is deemed a "specified employee" within the meaning of Section 409A of the Code, as determined by the Committee, at a time when the Grantee becomes eligible for settlement of the RSUs upon his or her "separation from service" within the meaning of Section 409A of the Code, then to the extent necessary to prevent any accelerated or additional tax under Section 409A of the Code, such settlement will be delayed until the earlier of: (a) the date that is six months following the Grantee's separation from service and (b) the Grantee's death.

7. No Right to Continued Service. Neither the Plan nor this Agreement shall confer upon the Grantee any right to be retained in any position, as an Employee, Consultant or Director of the Company. Further, nothing in the Plan or this Agreement shall be construed to limit the discretion of the Company to terminate the Grantee's Continuous Service at any time, with or without Cause.

8. Adjustments. If any change is made to the outstanding Common Stock or the capital structure of the Company, if required, the Restricted Stock Units shall be adjusted or terminated in any manner as contemplated by Section 11 of the Plan.

9. Tax Liability and Withholding.

9.1 The Grantee shall be required to pay to the Company, and the Company shall have the right to deduct from any compensation (or other) obligations paid or payable to the Grantee pursuant to the Plan, the amount of any required employee-side withholding taxes in respect of the Restricted Stock Units and to take all such other action as the Committee deems necessary to satisfy all obligations for the payment of such withholding taxes. The Committee shall require, as a precondition to the issuance and delivery of shares of Common Stock hereunder, that the Grantee have paid the Company in cash an amount equal to 100% of all federal, state and local employee-side withholding taxes associated with the Restricted Stock Units or the issuance and delivery of shares of Common Stock hereunder; provided, however, that subject to the discretion of the Committee, the Committee may instead determine to allow the Grantee to satisfy this sentence's requirement for payment of all federal, state and local employee-side tax withholding obligation by any of the following means (if so expressly allowed) or by a combination of such means expressly allowed, in any event totaling in value 100% of such amount: (a) authorizing the Company to withhold cash from any cash compensation to be paid to the Grantee, provided both the Company and the Grantee actually and reasonably believe cash compensation sufficiently large will become payable to the Participant within 45 days; (b) tendering a partial cash payment; (c) authorizing the Company to withhold shares of Common Stock from the shares of Common Stock otherwise issuable to the Grantee as a result of the Restricted Stock Units, provided, however, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by Applicable Law; or (d) delivering to the Company previously owned and unencumbered shares of Common Stock of the Company. Common Stock so withheld or delivered would be valued at its Fair Market Value as of the date of measurement of the amount of income subject to withholding. It is understood that the Committee may in its discretion decline to allow any or all of such alternative methods, and indeed may in its discretion require actual full cash payment in advance.

9.2 Notwithstanding any action the Company takes with respect to any or all income tax, social insurance, payroll tax, or other tax-related withholding ("**Tax-Related Items**"), the ultimate liability for all Tax-Related Items is and remains the Grantee's responsibility and the Company (a) makes no representation or undertakings regarding the treatment of any Tax-Related Items in connection with the grant, vesting or settlement of the Restricted Stock Units or the subsequent sale of any shares; and (b) does not commit to structure the Restricted Stock Units to reduce or eliminate the Grantee's liability for Tax-Related Items.

10. Confidentiality Obligations; Non-solicitation.

10.1 In consideration of the Restricted Stock Units, the Grantee agrees and covenants not to, directly or indirectly, solicit, recruit, attempt to hire or recruit, or induce the termination of employment of any employee of the Company or its Affiliates for 12 months following the Grantee's termination (due to whatever reason or cause) of Continuous Service.

10.2 If the Grantee breaches the covenant set forth in Section 10.1 or commits an intentional and non-trivial breach of any written confidential information and/or intellectual property assignment agreement with the Company:

(a) all unvested Restricted Stock Units shall be immediately forfeited; and

(b) the Grantee hereby consents and agrees that the Company shall be entitled to seek, in addition to other available remedies, a temporary, preliminary or permanent injunction or other equitable relief against such breach or threatened breach from any court of competent jurisdiction, without the necessity of showing any actual damages or that money damages would not afford an adequate remedy, and without the necessity of posting any bond or other security. The aforementioned equitable relief shall be in addition to, not in lieu of, legal remedies, monetary damages or other available forms of relief.

11. Compliance with Law. The issuance and transfer of shares of Common Stock shall be subject to compliance by the Company and the Grantee with all applicable requirements of federal and state securities laws and with all applicable requirements of any securities exchange on which the Company's shares of Common Stock may be listed. No shares of Common Stock shall be issued or transferred unless and until any then applicable requirements of state and federal laws and regulatory agencies have been fully complied with to the satisfaction of the Company and its counsel.

12. Notices. Any notice required to be delivered to the Company under this Agreement shall be in writing and addressed to the Secretary of the Company at the Company's principal corporate offices. Any notice required to be delivered to the Grantee under this Agreement shall be in writing and addressed to the Grantee at the Grantee's address as shown in the records of the Company. Either party may designate another address in writing (or by such other method approved by the Company) from time to time.

13. Governing Law. This Agreement will be construed and interpreted in accordance with the laws of the State of Delaware without regard to conflict of law principles.

14. Interpretation. Any dispute regarding the interpretation of this Agreement shall be submitted by the Grantee or the Company to the Committee for review. The resolution of such dispute by the Committee shall be final and binding on the Grantee and the Company.

15. Restricted Stock Units Subject to Plan. This Agreement is subject to the Plan, as it may be amended from time to time. The terms and provisions of the Plan as it may be amended from time to time are hereby incorporated herein by reference. In the event of a conflict between any term or provision contained herein and a term or provision of the Plan, the applicable terms and provisions of the Plan will govern and prevail.

16. Successors and Assigns. The Company may assign any of its rights under this Agreement. This Agreement will be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth herein, this Agreement will be binding upon the Grantee and any assigns and will inure to the benefit of the Grantee and the Grantee's executors, administrators and the person(s) to whom the Restricted Stock Units may be transferred by will or the laws of descent or distribution.

17. Severability. The invalidity or unenforceability of any provision of the Plan or this Agreement shall not affect the validity or enforceability of any other provision of the Plan or this Agreement, and each provision of the Plan and this Agreement shall be severable and enforceable to the extent permitted by law.

18. Discretionary Nature of Plan. The Plan is discretionary and may be amended, cancelled or terminated by the Company at any time, in its discretion. The grant of the Restricted Stock Units in this Agreement does not create any contractual right or other right to receive any other Restricted Stock Units or other Awards in the future. Future Awards, if any, will be at the sole discretion of the Company. Any amendment, modification, or termination of the Plan shall not constitute a change or impairment of the terms and conditions of the Grantee's employment with the Company.

19. Amendment. The Committee has the right to amend, alter, suspend, discontinue or cancel the Restricted Stock Units, prospectively or retroactively; provided, that no such amendment, alteration, suspension, discontinuance or cancellation shall adversely affect the Grantee's material rights under this Agreement without the Grantee's consent.

20. Section 409A. This Agreement is intended to comply with Section 409A of the Code or an exemption thereunder and shall be construed and interpreted in a manner that is consistent with the requirements for avoiding additional taxes or penalties under Section 409A of the Code. Notwithstanding the foregoing, the Company makes no representations that the payments and benefits provided under this Agreement comply with Section 409A of the Code and in no event shall the Company be liable for all or any portion of any taxes, penalties, interest or other expenses that may be incurred by the Grantee on account of non-compliance with Section 409A of the Code.

21. No Impact on Other Benefits. The value of the Grantee's Restricted Stock Units is not part of his or her normal or expected compensation for purposes of calculating any severance, retirement, welfare, insurance or similar employee benefit.

22. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which together will constitute one and the same instrument. Counterpart signature pages to this Agreement transmitted by facsimile transmission, by electronic mail in portable document format (.pdf), or by any other electronic means intended to preserve the original graphic and pictorial appearance of a document, will have the same effect as physical delivery of the paper document bearing an original signature.

23. Acceptance. The Grantee hereby acknowledges receipt of a copy of the Plan and this Agreement. The Grantee has read and understands the terms and provisions thereof, and accepts the Restricted Stock Units subject to all of the terms and conditions of the Plan and this Agreement. The Grantee acknowledges that there may be adverse tax consequences upon the vesting or settlement of the Restricted Stock Units or disposition of the underlying shares and that the Grantee has been advised to consult a tax advisor before such vesting, settlement or disposition.

IN WITNESS WHEREOF, the parties hereto have executed this Restricted Stock Unit Agreement as of the Grant Date.

BIOCEPT, INC.

By: _____
Name:
Title:

[NAME]

_____

EXHIBIT 31.1

CERTIFICATION

I, Michael W. Nall, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Biocept, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiary, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 16, 2021

/s/ Michael W. Nall
Michael W. Nall
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION

I, Timothy Kennedy, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Biocept, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiary, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 16, 2021

/s/ Timothy Kennedy
Timothy Kennedy
Chief Financial Officer, Senior Vice President of Operations
(Principal Financial and Accounting Officer)

EXHIBIT 32.1

CERTIFICATION

I, Michael W. Nall, hereby certify pursuant to Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, that, to my knowledge, the Quarterly Report on Form 10-Q of Biocept, Inc. for the period ended June 30, 2021 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Biocept, Inc.

Date: August 16, 2021

/s/ Michael W. Nall
Michael W. Nall
President and Chief Executive Officer
(Principal Executive Officer)

This certification accompanies the Report pursuant to Rule 13a-14(b) or Rule 15d-14(b) under the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934.

EXHIBIT 32.2

CERTIFICATION

I, Timothy Kennedy, hereby certify pursuant to Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, that, to my knowledge, the Quarterly Report on Form 10-Q of Biocept, Inc. for the period ended June 30, 2021 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Biocept, Inc.

Date: August 16, 2021

/s/ Timothy Kennedy
Timothy Kennedy
Chief Financial Officer, Senior Vice President of Operations
(Principal Financial and Accounting Officer)

This certification accompanies the Report pursuant to Rule 13a-14(b) or Rule 15d-14(b) under the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350 and shall not be deemed filed by the Company for purposes of Section 18 of the Securities Exchange Act of 1934.