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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 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: 001-34705

Codexis, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**71-0872999**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
200 Penobscot Drive, Redwood City, California	**94063**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (650) 421-8100

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 $0.0001 per share	CDXS	The Nasdaq Global Select Market

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 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 in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of November 1, 2021, there were 64,875,278 shares of the registrant's Common Stock, par value $0.0001 per share, outstanding.

Codexis, Inc.
Quarterly Report on Form 10-Q
For the Quarter Ended September 30, 2021

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Item 1. Financial Statements

Codexis, Inc.
Condensed Consolidated Balance Sheets
(Unaudited)
(In Thousands, Except Per Share Amounts)

	September 30, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 119,189	$ 149,117
Restricted cash, current	581	638
Investment in non-marketable debt security	—	1,000
Financial assets:		
Accounts receivable	25,084	13,894
Contract assets	12,701	4,526
Unbilled receivables	10,760	10,942
Total financial assets	48,545	29,362
Less: allowances	(74)	(74)
Total financial assets, net	48,471	29,288
Inventories	1,084	964
Prepaid expenses and other current assets	4,787	3,416
Total current assets	174,112	184,423
Restricted cash	1,519	1,062
Investment in non-marketable equity securities	12,763	1,450
Right-of-use assets - Operating leases, net	19,478	21,382
Right-of-use assets - Finance leases, net	43	119
Property and equipment, net	16,124	9,675
Goodwill	3,241	3,241
Other non-current assets	271	294
Total assets	$ 227,551	$ 221,646
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 3,281	$ 2,970
Accrued compensation	9,041	7,288
Other accrued liabilities	15,927	10,272
Current portion of lease obligations - Operating leases	2,782	2,627
Deferred revenue	2,449	1,824
Total current liabilities	33,480	24,981
Deferred revenue, net of current portion	3,747	2,967
Long-term lease obligations - Operating leases	20,218	22,324
Other long-term liabilities	1,051	1,271
Total liabilities	58,496	51,543
Commitments and Contingencies (Note 10)		
Stockholders' equity:		
Preferred stock, $0.0001 par value per share; 5,000 shares authorized, none issued and outstanding	—	—
Common stock, $0.0001 par value per share; 100,000 shares authorized; 64,833 and 64,283 shares issued and outstanding at September 30, 2021 and December 31, 2020, respectively	6	6
Additional paid-in capital	546,557	536,516
Accumulated deficit	(377,508)	(366,419)
Total stockholders' equity	169,055	170,103
Total liabilities and stockholders' equity	$ 227,551	$ 221,646

See accompanying notes to the unaudited condensed consolidated financial statements.

Codexis, Inc.
Condensed Consolidated Statements of Operations
(Unaudited)
(In Thousands, Except Per Share Amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Revenues:				
Product revenue	$ 28,731	$ 8,401	$ 53,674	$ 18,005
Research and development revenue	8,038	9,984	26,579	30,018
Total revenues	36,769	18,385	80,253	48,023
Costs and operating expenses:				
Cost of product revenue	6,867	3,642	15,403	7,882
Research and development	15,165	12,010	39,562	33,830
Selling, general and administrative	13,407	8,797	37,600	26,307
Total costs and operating expenses	35,439	24,449	92,565	68,019
Income (loss) from operations	1,330	(6,064)	(12,312)	(19,996)
Interest income	41	39	424	362
Other income (expense), net	983	(50)	920	(125)
Income (loss) before income taxes	2,354	(6,075)	(10,968)	(19,759)
Provision for income taxes	110	19	121	331
Net income (loss)	$ 2,244	$ (6,094)	$ (11,089)	$ (20,090)
Net income (loss) per share, basic	$ 0.03	$ (0.10)	$ (0.17)	$ (0.34)
Net income (loss) per share, diluted	$ 0.03	$ (0.10)	$ (0.17)	$ (0.34)
Weighted average common stock shares used in computing net income (loss) per share, basic	64,628	59,061	64,452	58,984
Weighted average common stock shares used in computing net income (loss) per share, diluted	67,741	59,061	64,452	58,984

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)
(In Thousands)

Three months ended September 30, 2021	Common Stock Shares	Common Stock Amount	Additional paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
Balance as of July 1, 2021	64,623	$ 6	$ 542,519	$ (379,752)	$ 162,773
Exercise of stock options	210	—	1,022	—	1,022
Employee stock-based compensation	—	—	2,955	—	2,955
Non-employee stock-based compensation	—	—	61	—	61
Net income	—	—	—	2,244	2,244
Balance as of September 30, 2021	64,833	$ 6	$ 546,557	$ (377,508)	$ 169,055

Three months ended September 30, 2020	Common Stock Shares	Common Stock Amount	Additional paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
Balance as of July 1, 2020	59,125	$ 6	$ 451,185	$ (356,405)	$ 94,786
Exercise of stock options	55	—	342	—	342
Release of stock awards	70	—	—	—	—
Taxes paid related to net shares settlement of equity awards	(18)	—	(217)	—	(217)
Employee stock-based compensation	—	—	1,941	—	1,941
Non-employee stock-based compensation	—	—	43	—	43
Net loss	—	—	—	(6,094)	(6,094)
Balance as of September 30, 2020	59,232	$ 6	$ 453,294	$ (362,499)	$ 90,801

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)
(In Thousands)

Nine months ended September 30, 2021	Common Stock Shares	Common Stock Amount	Additional paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
Balance as of January 1, 2021	64,283	$ 6	$ 536,516	$ (366,419)	$ 170,103
Exercise of stock options	423	—	2,700	—	2,700
Release of stock awards	181	—	—	—	—
Taxes paid related to net shares settlement of equity awards	(54)	—	(1,206)	—	(1,206)
Employee stock-based compensation	—	—	8,360	—	8,360
Non-employee stock-based compensation	—	—	187	—	187
Net loss	—	—	—	(11,089)	(11,089)
Balance as of September 30, 2021	64,833	$ 6	$ 546,557	$ (377,508)	$ 169,055

Nine months ended September 30, 2020	Common Stock Shares	Common Stock Amount	Additional paid-in Capital	Accumulated Deficit	Total Stockholders' Equity
Balance as of January 1, 2020	58,877	$ 6	$ 447,920	$ (342,409)	$ 105,517
Exercise of stock options	87	—	539	—	539
Release of stock awards	370	—		—	—
Taxes paid related to net shares settlement of equity awards	(102)	—	(1,257)	—	(1,257)
Employee stock-based compensation	—	—	6,045	—	6,045
Non-employee stock-based compensation	—	—	47	—	47
Net loss	—	—	—	(20,090)	(20,090)
Balance as of September 30, 2020	59,232	$ 6	$ 453,294	$ (362,499)	$ 90,801

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited, in Thousands)

	Nine Months Ended September 30,	
	2021	**2020**
Operating activities:		
Net loss	$ (11,089)	$ (20,090)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	2,143	1,403
Amortization expense - right-of-use assets - operating and finance leases	1,980	1,964
Stock-based compensation	8,547	6,092
Allowance for credit losses	—	40
Equity securities earned from research and development activities	(675)	—
Unrealized gain on non-marketable securities	(1,033)	—
Other non-cash items	(19)	—
Changes in operating assets and liabilities:		
Financial assets, net	(19,633)	(6,482)
Inventories	(120)	(366)
Prepaid expenses and other assets	(1,195)	(1,105)
Accounts payable	575	(101)
Accrued compensation and other accrued liabilities	7,036	3,581
Other long-term liabilities	(2,324)	(1,920)
Deferred revenue	880	2,012
Net cash used in operating activities	(14,927)	(14,972)
Investing activities:		
Purchase of property and equipment	(8,348)	(2,260)
Proceeds from sale of property and equipment	36	—
Investment in equity securities	(7,630)	(1,000)
Net cash used in investing activities	(15,942)	(3,260)
Financing activities:		
Proceeds from exercises of stock options	2,700	539
Costs incurred in connection with equity financing	(153)	—
Payments of lease obligations - Finance leases	—	(60)
Taxes paid related to net share settlement of equity awards	(1,206)	(1,257)
Net cash provided by (used in) financing activities	1,341	(778)
Net decrease in cash, cash equivalents and restricted cash	(29,528)	(19,010)
Cash, cash equivalents and restricted cash at the beginning of the period	150,817	92,221
Cash, cash equivalents and restricted cash at the end of the period	$ 121,289	$ 73,211
Supplemental disclosure of cash flow information:		
Interest paid	$ 6	$ 15
Income taxes paid	$ 101	$ 312
Supplemental non-cash investing and financing activities:		
Capital expenditures incurred but not yet paid	$ 2,012	$ 289

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the unaudited condensed consolidated balance sheets as of September 30, 2021 and 2020 to the total of the same such amounts shown above in the unaudited condensed consolidated statements of cash flows:

	September 30,	
	2021	**2020**
Cash and cash equivalents	$ 119,189	$ 71,516
Restricted cash, current and non-current	2,100	1,695
Total cash, cash equivalents and restricted cash	$ 121,289	$ 73,211

See accompanying notes to the unaudited condensed consolidated financial statements

Note 1. Description of Business

In these notes to the unaudited condensed consolidated financial statements, the "Company," "we," "us," and "our" refers to Codexis, Inc. and its subsidiaries on a consolidated basis.

We discover, develop and sell enzymes and other proteins that deliver value to our clients in a growing set of industries to commercialize an increasing number of novel enzymes, both as proprietary Codexis products and in partnership with our customers.

We are a pioneer in harnessing computational technologies to drive biology advancements. Since 2002, we have made substantial investments in the development of our CodeEvolver® protein engineering technology platform. Our technology platform is powered by proprietary, artificial intelligence-based, computational algorithms that rapidly mine the structural and performance attributes of our large and continuously growing library of protein variants. These computational outputs enable increasingly reliable predictions for next generation protein variants to be engineered, enabling time- and cost-efficient delivery of the targeted performance enhancements. Additionally, our CodeEvolver® protein engineering technology platform integrates additional modular competencies, including robotic high-throughput screening and genomic sequencing, organic chemistry and bioprocess development which are all coordinated to rapidly innovate novel, fit-for-purpose products.

The core historical application of the technology has been in developing commercially viable biocatalytic manufacturing processes for more sustainable production of complex chemicals. This begins by conceptually designing the most cost-effective and practical process for a targeted product. We then develop optimized biocatalysts to enable the designed process, using our CodeEvolver® platform. Engineered biocatalyst candidates, numbering many thousands for each project, are then rapidly screened and validated using high throughput methods under process-relevant operating conditions. This approach results in an optimized biocatalyst that enables cost-efficient processes that are relatively simple to run in conventional manufacturing equipment. This also allows for efficient technical transfer of our processes to our manufacturing partners.

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the manufacture of small molecule pharmaceuticals, which remains a primary business focus. Our customers, which include many large, global pharmaceutical companies, use our technology, products and services in their process development and in manufacturing. Additionally, we have licensed our proprietary CodeEvolver® protein engineering technology platform to global pharmaceutical companies enabling them to use this technology, in house, to engineer enzymes for their own businesses. Most recently, in May 2019, we entered into a Platform Technology Transfer and License Agreement (the "Novartis CodeEvolver® Agreement") with Novartis. The Novartis CodeEvolver® Agreement (our third such agreement with large pharma companies) allows Novartis to use our proprietary CodeEvolver® protein engineering platform technology in the field of human healthcare.

As evidence of our strategy to extend our technology beyond pharmaceutical manufacturing, we have also used the technology to develop biocatalysts and enzyme products for use in a broader set of industrial markets, including several large verticals, such as food, feed, consumer care and fine chemicals. In addition, we are using our technology to develop enzymes for various life science related applications, such as next generation sequencing ("NGS") and polymerase chain reaction ("PCR/qPCR") for in vitro molecular diagnostic and genomic research applications. In December 2019, we entered into a license agreement to provide Roche Sequencing Solutions, Inc. with our first enzyme for this target market: the Company's EvoT4™ DNA ligase. In June 2020, we entered into a co-marketing and enzyme supply collaboration agreement with Alphazyme LLC for the production and co-marketing of enzymes for life science applications including, initially, high-fidelity DNA polymerase, T7 RNA polymerase and reverse transcriptase enzymes.

We have been using the CodeEvolver® protein engineering technology platform to develop early stage, novel biotherapeutic product candidates, both in partnership with customers and for our own proprietary Codexis drug candidates. Our first program was for the potential treatment of phenylketonuria ("PKU") in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient. In October 2017, we entered into a Global Development, Option and License Agreement (the "Nestlé License Agreement") with Société des Produits Nestlé S.A., formerly known as Nestec Ltd. ("Nestlé Health Science") to advance CDX-6114, our enzyme biotherapeutic product candidate for the potential treatment of PKU. In February 2019, Nestlé Health Science exercised its option to obtain an exclusive license to develop and commercialize CDX-6114.

Also in October 2017, we entered into a strategic collaboration agreement with Nestlé Health Science ("Nestlé SCA") pursuant to which we and Nestlé Health Science are collaborating to leverage the CodeEvolver® platform technology to develop other novel enzymes for Nestlé Health Science's established Consumer Care and Medical Nutrition business areas.

In January 2020, we entered into a development agreement with Nestlé Health Science to advance a new lead candidate discovered under the Nestlé SCA, CDX-7108, into preclinical development and early clinical studies as a potential treatment for a gastrointestinal disorder.

In March 2020, we entered into a Strategic Collaboration and License Agreement ("Takeda Agreement") with Shire Human Genetic Therapies, Inc., a wholly-owned subsidiary of Takeda Pharmaceutical Company Limited ("Takeda"), for the research and development of novel gene therapies for certain disease indications, including the treatment of lysosomal storage disorders and a blood factor deficiency.

In June 2020, we entered into a Master Collaboration and Research Agreement (the "MAI Agreement") with Molecular Assemblies, Inc ("MAI") pursuant to which we are leveraging our CodeEvolver® platform technology to improve the DNA polymerase enzymes that are critical for enzymatic DNA synthesis. Concurrently with the MAI Agreement, we purchased 1,587,050 shares of MAI's Series A preferred stock for $1.0 million and, in connection with the transaction, John Nicols, our President and Chief Executive Officer, joined MAI's board of directors. In April 2021, we purchased an additional 1,000,000 shares of MAI's Series A preferred stock for $0.6 million. In September 2021, we purchased 9,198,423 shares of MAI's Series B preferred stock for $7.0 million (see Note 11 "Related Party Transactions" for additional information).

See Note 12 "Segment, Geographical and Other Revenue Information" for additional information.

Below are brief descriptions of our business segments:

Performance Enzymes

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the manufacture of small molecule pharmaceuticals and, to date, this continues to be our largest market served. Our customers, which include many large global pharmaceutical companies, use our technology, products and services in their manufacturing processes and process development. We have also used the technology to develop customized enzymes for use in other industrial markets. These markets consist of several large industrial verticals, including food, feed, consumer care, and fine chemicals. We also use our technology in the life sciences markets to develop enzymes for customers using NGS and PCR/qPCR for in vitro molecular diagnostic and molecular biology research applications, as well DNA/RNA synthesis and health monitoring applications.

Novel Biotherapeutics

We are also targeting new opportunities in the pharmaceutical industry to discover, improve, and/or develop biotherapeutic drug candidates. We believe that our CodeEvolver® protein engineering platform technology can be used to discover novel biotherapeutic drug candidates that will target human diseases that are in need of improved therapeutic interventions. Similarly, we believe that we can deploy our platform technology to improve specific characteristics of a customer's pre-existing biotherapeutic drug candidate, such as its activity, stability or immunogenicity.

Our first lead program was for the potential treatment of PKU in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient. In October 2017, we announced a global development, option and license agreement with Nestlé Health Science to advance CDX-6114, our own novel orally administrable enzyme therapeutic candidate for the potential treatment of PKU. In February 2019, Nestlé Health Science exercised its option to obtain an exclusive, worldwide, royalty-bearing, sub-licensable license for the global development and commercialization of CDX-6114 for the management of PKU. Upon exercising its option, Nestlé Health Science assumed all responsibilities for future clinical development and commercialization of CDX-6114.

In October 2017, we entered into the Nestlé SCA pursuant to which we and Nestlé Health Science are collaborating to leverage the CodeEvolve® platform technology to develop other novel enzymes for Nestlé Health Science's established Consumer Care and Medical Nutrition business areas. The Nestlé SCA was extended through December 2021. In January 2020, we and Nestlé Health Science entered into a development agreement pursuant to which we and Nestlé Health Science are collaborating to advance into preclinical and early clinical studies a lead candidate targeting a gastrointestinal disorder, CDX-7108, discovered through the Nestlé SCA. During 2021, we, together with Nestlé Health Science, continued to advance CDX-7108 towards initiation of a Phase 1 clinical trial which commenced in October 2021. Additionally, the parties are progressing three programs under the Nestlé SCA targeting different gastrointestinal disorders.

In March 2020, we entered into the Takeda Agreement pursuant to which we are collaborating to research and develop protein sequences for use in gene therapy products for certain disease indications in accordance with the respective program plans for Fabry Disease, Pompe Disease, and an undisclosed blood factor deficiency. In March 2020, we received a one-time, non-refundable cash payment of $8.5 million. Of these programs, the Fabry disease program is the most advanced, with multiple sequences, including CDX-6311, having been provided to Takeda. In May 2021, Takeda elected to exercise their option to expand the collaboration into a fourth program for an undisclosed rare genetic disorder.

Business Update Regarding COVID-19

We are subject to risks and uncertainties as a result of the current COVID-19 pandemic. The COVID-19 pandemic has presented a substantial public health and economic challenge around the world and is affecting our employees, communities and business operations, as well as the U.S. economy and other economies worldwide. The full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations and financial condition will depend on future developments that are highly uncertain and may not be accurately predicted, including the duration and severity of the pandemic and the extent and severity of the impact on our customers, new information that may emerge concerning COVID-19, the actions taken to contain it or treat its impact and the economic impact on local, regional, national and international markets.

To date, we and our collaboration partners have been able to continue to supply our enzymes to our customers worldwide. However, we are dependent on our manufacturing and logistics partners and consequently, disruptions in operations of our partners and customers may affect our ability to supply enzymes to our customers. Furthermore, our ability to provide future research and development ("R&D") services will continue to be impacted as a result of governmental orders and any disruptions in operations of our customers with whom we collaborate. We believe that these disruptions have had a minimal impact on revenue for the three and nine months ended September 30, 2021. The extent to which the pandemic may impact our business operations and operating results will continue to remain highly dependent on future developments, which are uncertain and cannot be predicted with confidence.

In the U.S., the impact of COVID-19, including governmental orders ("Orders") governing the operation of businesses during the pandemic, caused the temporary closure of our Redwood City, California facilities and disrupted our R&D operations in 2020. R&D operations for several projects were temporarily suspended from mid-March 2020 through the end of April 2020 in accordance with these Orders. In May 2020, we initiated limited R&D operations and have ramped up operations such that we are currently utilizing our normal R&D capacity while following county, state and federal COVID-19 guidance for the protection of our employees. Additionally, we resumed manufacturing at our Redwood City pilot plant in May 2020.

Our future results of operations and liquidity could be adversely impacted by delays in payments of outstanding receivable amounts beyond normal payment terms, supply chain disruptions and uncertain demand, and the impact of any initiatives or programs that we may undertake to address financial and operations challenges faced by our customers. The near and long term impact of COVID-19 to our financial condition, liquidity, or results of operations in the future remains uncertain. Although some of the Orders that were enacted to control the spread of COVID-19 were scaled back and the vaccine rollout has expanded, surges in the spread of COVID-19 due to the emergence of new more contagious variants or the ineffectiveness of the vaccines against such strains, may result in the reimplementation of certain Orders, which could adversely impact our business.

Note 2. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The accompanying Unaudited Condensed Consolidated Financial Statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP") and the applicable rules and regulations of the Securities and Exchange Commission ("SEC") for interim financial information but does not include all the information and notes required by GAAP for complete financial statements. These interim Unaudited Condensed Consolidated Financial Statements should be read in conjunction with the audited consolidated financial statements and notes thereto contained in our Annual Report on Form 10-K for the year ended December 31, 2020. The condensed consolidated balance sheet at December 31, 2020, has been derived from the audited consolidated financial statements at that date, but does not include all disclosures, including notes, required by GAAP for complete financial statements. The significant accounting policies used in preparation of the Unaudited Condensed Consolidated Financial Statements for the three and nine months ended September 30, 2021 and 2020, are consistent with those discussed in Note 2 to the audited consolidated financial statements in the Company’s 2020 Annual Report on Form 10-K and are updated below as necessary. There have been no significant changes in our significant accounting policies or critical accounting estimates since December 31, 2020.

Certain prior year amounts have been reclassified in the Unaudited Condensed Statements of Cash Flows to conform to the 2021 presentation, however these reclassifications had no effect on the reported results of operations.

The Unaudited Condensed Consolidated Financial Statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments of a normal recurring nature considered necessary to present fairly our financial position as of September 30, 2021, results of our operations for the three and nine months ended September 30, 2021 and 2020, changes in stockholders' equity for the three and nine months ended September 30, 2021 and 2020, and cash flows for the nine months ended September 30, 2021 and 2020. The interim results are not necessarily indicative of the results for any future interim period or for the entire year.

The Unaudited Condensed Consolidated Financial Statements include the accounts of Codexis, Inc. and its wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of our unaudited condensed consolidated financial statements in conformity with GAAP requires us to make estimates, judgments and assumptions that may affect the reported amounts of assets, liabilities, equity, revenues and expenses and related disclosure of contingent assets and liabilities. We regularly assess these estimates which primarily affect revenue recognition, inventories, valuation of equity investments, goodwill arising out of business acquisitions, accrued liabilities, stock awards, and the valuation allowances associated with deferred tax assets. Actual results could differ from those estimates and such differences may be material to the consolidated financial statements. The full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations and financial condition, including sales, expenses, reserves and allowances, manufacturing, research and development costs and employee-related amounts, will depend on future developments that are highly uncertain, and may not be accurately predicted, including as a result of new information that may emerge concerning COVID-19 and the actions taken to contain or treat COVID-19, as well as the economic impact on local, regional, national and international customers, markets and economies.

Accounting Pronouncements

Recently adopted accounting pronouncements

In December 2019, the Financial Accounting Standards Board ("FASB") issued ASU No. 2019-12 *Income Taxes* (Topic 740): *Simplifying the Accounting for Income Taxes* which is intended to simplify various aspects related to accounting for income taxes. We adopted the standard on January 1, 2021, on a modified retrospective basis. The adoption of this standard had no impact on our Unaudited Condensed Consolidated Financial Statements.

In October 2020, the FASB issued ASU No. 2020-10,*Codification Improvement*s. ASU 2020-10 provides amendments to a wide variety of topics in the FASB's Accounting Standards Codification, which applies to all reporting entities within the scope of the affected accounting guidance. We adopted the standard on January 1, 2021 on a retrospective basis. The adoption of this standard had no impact on our Unaudited Condensed Consolidated Financial Statements.

Recently issued accounting pronouncements not yet adopted

From time to time, new accounting pronouncements are issued by the FASB or other standards setting bodies that are adopted by us as of the specified effective date. Unless otherwise discussed, we believe that the recently issued standards that are not yet effective will not have a material impact on our Unaudited Condensed Consolidated Financial Statements upon adoption.

In May 2021, FASB issued ASU No. 2021-04,*Earnings Per Share (Topic 260), Debt—Modifications and Extinguishments (Subtopic 470-50), Compensation—Stock Compensation (Topic 718), and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40), Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options, a consensus of the Emerging Issues Task Force*. The standard establishes a principles-based framework in accounting for modifications of freestanding equity-classified written call options on the basis of the economic substance of the underlying transaction. The standard also requires incremental financial statement disclosures. The standard affects entities that present earnings per share in accordance with the guidance in Topic 260, Earnings Per Share. The standard is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years with early adoption is permitted by applying the standard as of the beginning of the fiscal year that includes that interim period. The standard may be adopted prospectively for modifications or exchanges occurring on or after the effective date. We will evaluate modifications of equity-classified written call options to determine applicability of the standard on occurrence; however, we believe that the adoption of ASU 2021-04 will have no significant impact on our Unaudited Condensed Consolidated Financial Statements and related disclosures.

In August 2020, FASB issued ASU No. 2020-06*Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging— Contracts in Entity's Own Equity (Subtopic 815-40) No. 2020-06 August 2020 Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*, to reduce the complexity and to simplify the accounting for convertible debt instruments and convertible preferred stock, and the derivatives scope exception for contracts in an entity's own equity. In addition, the guidance on calculating diluted earnings per share has been simplified and made more internally consistent. The standard is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years with early adoption permitted for fiscal years beginning December 15, 2020. The standard may be adopted on a modified retrospective or fully retrospective method of transition and on adoption, entities may irrevocably elect the fair value option in accordance with Subtopic 825-10, *Financial Instruments—Overall,* for any financial instrument that is a convertible security. We believe that the adoption of ASU 2020-06 will have no significant impact on our Unaudited Condensed Consolidated Financial Statements and related disclosures.

In March 2020, the FASB issued ASU No. 2020-04,*Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*.The standard provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions in which the reference LIBOR or another reference rate are expected to be discontinued as a result of the Reference Rate Reform. The standard is effective for all entities and can be adopted no later than December 1, 2022, with early adoption permitted. The standard may be adopted on a prospective basis. We will evaluate transactions or contract modifications occurring as a result of reference rate reform and determine whether to elect optional expedients for contract modification; however, we believe that the adoption of ASU 2020-04 will have no significant impact on our Unaudited Condensed Consolidated Financial Statements and related disclosures.

There have been no other recent accounting pronouncements or changes in accounting pronouncements during the three and nine months ended September 30, 2021, as compared to the recent accounting pronouncements described in herein, that are of significance or potential significance to us.

Note 3. Revenue Recognition

Disaggregation of Revenue

The following table provides information about disaggregated revenue from contracts with customers into the nature of the products and services, and geographic regions, and includes a reconciliation of the disaggregated revenue with reportable segments. The geographic regions that are tracked are the Americas (United States, Canada, and Latin America), EMEA (Europe, Middle East, and Africa), and APAC (Australia, New Zealand, Southeast Asia, and China).

Segment information is as follows (in thousands):

	Three months ended September 30, 2021			Three months ended September 30, 2020		
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total
Major products and service:						
Product revenue	$ 28,731	$ —	$ 28,731	$ 8,401	$ —	$ 8,401
Research and development revenue	3,853	4,185	8,038	4,604	5,380	9,984
Total revenues	$ 32,584	$ 4,185	$ 36,769	$ 13,005	$ 5,380	$ 18,385
Primary geographical markets:						
Americas	$ 5,999	$ 1,817	$ 7,816	$ 3,209	$ 2,632	$ 5,841
EMEA	2,317	2,368	4,685	2,141	2,748	4,889
APAC	24,268	—	24,268	7,655	—	7,655
Total revenues	$ 32,584	$ 4,185	$ 36,769	$ 13,005	$ 5,380	$ 18,385

	Nine months ended September 30, 2021			Nine months ended September 30, 2020		
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total
Major products and service:						
Product revenue	$ 53,674	$ —	$ 53,674	$ 18,005	$ —	$ 18,005
Research and development revenue	14,723	11,856	26,579	13,380	16,638	30,018
Total revenues	$ 68,397	$ 11,856	$ 80,253	$ 31,385	$ 16,638	$ 48,023
Primary geographical markets:						
Americas	$ 12,573	$ 6,015	$ 18,588	$ 7,381	$ 10,591	$ 17,972
EMEA	11,294	5,841	17,135	8,128	6,047	14,175
APAC	44,530	—	44,530	15,876	—	15,876
Total revenues	$ 68,397	$ 11,856	$ 80,253	$ 31,385	$ 16,638	$ 48,023

Contract Balances

The following table presents balances of contract assets, unbilled receivables, contract costs, and contract liabilities (in thousands):

	September 30, 2021	December 31, 2020
Contract assets	$ 12,701	$ 4,526
Unbilled receivables	$ 10,760	$ 10,942
Contract costs	$ 70	$ 90
Contract liabilities: deferred revenue	$ 6,196	$ 4,791

We had no asset impairment charges related to financial assets in the three and nine months ended September 30, 2021 and 2020.

The increase in contract assets was primarily due to increase in product revenue from contracts subject to over time

revenue recognition. The nominal decrease in unbilled receivables was primarily due to the timing of billings The increase in deferred revenue was primarily due to cash advances received in excess of revenue recognized.

We recognized the following revenues (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
Revenue recognized in the period for:	2021	2020	2021	2020
Amounts included in contract liabilities at the beginning of the period:				
Performance obligations satisfied	$ 658	$ 708	$ 1,997	$ 58
Changes in the period:				
Changes in the estimated transaction price allocated to performance obligations satisfied in prior periods	1,521	233	5,848	854
Performance obligations satisfied from new activities in the period - contract revenue	34,590	17,444	72,408	47,111
Total revenues	$ 36,769	$ 18,385	$ 80,253	$ 48,023

Performance Obligations

The following table includes estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting periods. The estimated revenue does not include contracts with original durations of one year or less, amounts of variable consideration attributable to royalties, or contract renewals that are unexercised as of September 30, 2021.

The balances in the table below are partially based on judgments involved in estimating future orders from customers subject to the exercise of material rights pursuant to respective contracts as of September 30, 2021 (in thousands):

	Remainder of 2021	2022	2023	2024 and Thereafter	Total
Product revenue	$ 5	$ 67	$ 67	$ 2,700	$ 2,839
Research and development revenue	1,106	1,705	546	—	3,357
Total revenues	$ 1,111	$ 1,772	$ 613	$ 2,700	$ 6,196

Note 4. Net Income (loss) per Share

Basic net income (loss) per share is computed by dividing the net income (loss) by the weighted-average number of shares of common stock outstanding, less restricted stock awards ("RSAs") subject to forfeiture. Diluted net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of shares of common stock shares outstanding, less RSAs subject to forfeiture, plus all additional common shares that would have been outstanding, assuming dilutive potential common stock shares had been issued for other dilutive securities.

Anti-Dilutive Securities

In periods of net loss, the weighted average number of shares outstanding, prior to the application of the treasury stock method, excludes potentially dilutive securities from the computation of diluted net loss per common share because including such shares would have an anti-dilutive effect.

The following table sets forth the computation of basic and diluted net income (loss) per share during the three and nine months ended September 30, 2021 and 2020 (in thousands, except per share amounts):

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Numerator:				
Net income (loss)	$ 2,244	$ (6,094)	$ (11,089)	$ (20,090)
Denominator:				
Weighted average common stock shares used in computing net income (loss) per share, basic	64,628	59,061	64,452	58,984
Effect of dilutive shares	3,113	—	—	—
Weighted average common stock shares used in computing net income (loss) per share, diluted	67,741	59,061	64,452	58,984
Net income (loss) per share, basic	$ 0.03	$ (0.10)	$ (0.17)	$ (0.34)
Net income (loss) per share, diluted	$ 0.03	$ (0.10)	$ (0.17)	$ (0.34)

The following shares were not considered in the computation of diluted net income (loss) per share because their effect was anti-dilutive (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Shares issuable under the Equity Incentive Plan	451	5,182	5,148	5,182

Note 5. Investments in Non-Marketable Securities

Non-Marketable Debt Securities

We classify non-marketable debt securities, which are accounted for as available-for-sale, within Level 3 in the fair value hierarchy because we estimate the fair value based on a qualitative analysis using the most recent observable transaction price and other significant unobservable inputs including volatility, rights, and obligations of the securities we hold.

We determine gains or losses on the sale or extinguishment of non-marketable debt securities using a specific identification method. Unrealized gains and losses from bifurcated embedded derivatives, which represent share-settled redemption features, are recorded as other expense, net, in the unaudited condensed consolidated statements of operations. Unrealized gains and losses on non-marketable debt securities are recorded as a component of other comprehensive loss until realized. Realized gains or losses are recorded as a component of other income (expense), net.

In November 2020, we purchased convertible subordinated notes issued by Arzeda Corp., an early-stage computational protein design company, for $1.0 million. The investment was classified as available-for-sale non-marketable interest-bearing debt securities with a carrying value of $1.0 million as of December 31, 2020. In July 2021, we converted the non-marketable debt security with a carrying value of $1.3 million into 207,070 shares of Series B-2 preferred stock of Arzeda Corp. In the three and nine months ended September 30, 2021, we recognized nil and $0.3 million, respectively, in interest income from amortization of debt discount and interest earned on our investment in this debt security, and nil and $10.5 thousand in other expense, respectively, in other income (expense), net, on the change in the fair value of an embedded bifurcated derivative. We recognized no unrealized or realized gains or losses during the three and nine months ended September 30, 2021. We recognized no interest income, other expenses, and unrealized or realized gains or losses during the three and nine months ended September 30, 2020.

There were no investments in non-marketable debt securities at September 30, 2021. As of December 31, 2020, the adjusted cost and carrying value and fair value of the non-marketable debt security is the following (in thousands):

	December 31, 2020	
	Adjusted Cost and Carrying Value	Fair Value
Non-marketable debt security due in 1 year or less	$ 1,000	$ 1,000

Non-Marketable Equity Securities

Non-marketable equity securities are investments in privately held companies without readily determinable market value. We measure investments in non-marketable equity securities without a readily determinable fair value using a measurement alternative that measures these securities at the cost method minus impairment, if any, plus or minus changes resulting from observable price changes on a non-recurring basis. We adjust the carrying value of non-marketable equity securities which have been remeasured during the period and recognize resulting gains or losses as a component of other income (expense), net.

We measured our equity investments in MAI and Arzeda Corp. based on the measurement alternative and adjusted the carrying values for observable price changes in orderly transactions for an identical or similar equity securities of the same issuer. We recognized a $0.7 million gain in other income (expense), net, on the change in the carrying value of our investment in MAI as a result of a recent round of financing. We recognized no unrealized or realized gain or losses during the three and nine months ended September 30, 2020. The carrying value of our investment in MAI was $11.5 million and $1.5 million at September 30, 2021 and December 31, 2020, respectively. The carrying value of our investment in Arzeda Corp. was $1.3 million at September 30, 2021.

The following table presents balances of the carrying value of non-marketable equity securities (in thousands):

	September 30, 2021	December 31, 2020
Non-marketable equity securities	$ 12,763	$ 1,450

Note 6. Fair Value Measurements

The following tables present the financial instruments that were measured at fair value on a recurring basis within the fair value hierarchy (in thousands):

	September 30, 2021			
	Level 1	Level 2	Level 3	Total
Money market funds	$ 95,089	$ —	$ —	$ 95,089

	December 31, 2020			
	Level 1	Level 2	Level 3	Total
Money market funds	$ 127,567	$ —	$ —	$ 127,567
Non-marketable debt security	—	—	1,000	1,000
Total	$ 127,567	$ —	$ 1,000	$ 128,567

During the three and nine months ended September 30, 2021 and 2020, we didnot recognize any significant credit losses nor other-than-temporary impairment losses on non-marketable securities.

Note 7. Balance Sheets Details

Cash Equivalents

Cash equivalents as of September 30, 2021 and December 31, 2020, consisted of the following (in thousands):

	September 30, 2021		December 31, 2020	
	Adjusted Cost	Estimated Fair Value	Adjusted Cost	Estimated Fair Value
Money market funds [1]	$ 95,089	$ 95,089	$ 127,567	$ 127,567

[1] Money market funds are classified in cash and cash equivalents on our consolidated balance sheets. Average Contractual Maturities (in days) is not applicable.

As of September 30, 2021, the total cash and cash equivalents balance of $119.2 million was comprised of money market funds of $95.1 million and cash of $24.1 million held with major financial institutions. As of December 31, 2020, the total cash and cash equivalents balance of $149.1 million was comprised of money market funds of $127.6 million and cash of $21.5 million held with major financial institutions.

Inventories

Inventories consisted of the following (in thousands):

	September 30, 2021	December 31, 2020
Raw materials	$ 49	$ 77
Work-in-process	77	82
Finished goods	958	805
Inventories	$ 1,084	$ 964

Inventories are recorded net of reserves of $1.5 million as of September 30, 2021 and December 31, 2020.

Property and Equipment, net

Property and equipment, net consisted of the following (in thousands):

	September 30, 2021	December 31, 2020
Laboratory equipment	$ 29,103	$ 25,468
Leasehold improvements	10,785	10,785
Computer equipment and software	3,313	3,192
Office equipment and furniture	1,247	1,246
Construction in progress	6,678	2,357
Property and equipment	51,126	43,048
Less: accumulated depreciation and amortization	(35,002)	(33,373)
Property and equipment, net	$ 16,124	$ 9,675

Depreciation expense included in the Unaudited Condensed Consolidated Statements of Operations was follows (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Depreciation Expense	$ 768	$ 503	$ 2,143	$ 1,403

Goodwill

Goodwill had a carrying value of $3.2 million as of September 30, 2021 and December 31, 2020.

Other Accrued Liabilities

Other accrued liabilities consisted of the following (in thousands):

	September 30, 2021	December 31, 2020
Accrued purchases	$ 9,050	$ 7,170
Accrued professional and outside service fees	5,936	2,589
Other	941	513
Total	$ 15,927	$ 10,272

Note 8. Stock-based Compensation

Equity Incentive Plans

In 2019, our board of directors (the "Board") and stockholders approved the 2019 Incentive Award Plan (the "2019 Plan"). The 2019 Plan superseded and replaced in its entirety our 2010 Equity Incentive Plan (the “2010 Plan”) which was effective in March 2010, and no further awards will be granted under the 2010 Plan; however, the terms and conditions of the 2010 Plan will continue to govern any outstanding awards thereunder.

The 2019 Plan provides for the grant of stock options, including incentive stock options and non-qualified stock options, stock appreciation rights, restricted stock awards ("RSAs"), restricted stock units ("RSUs"), performance-contingent restricted stock units ("PSUs"), performance-based options ("PBOs"), other stock or cash-based awards and dividend equivalents to eligible employees and consultants of the Company or any parent or subsidiary, as well as members of the Board.

The number of shares of our common stock available for issuance under the 2019 Plan is equal to the sum of (i) 7,897,144 shares, and (ii) any shares subject to awards granted under the 2010 Plan that were outstanding as of April 22, 2019 and thereafter terminate, expire, lapse or are forfeited provided that no more than 14,000,000 shares may be issued upon the exercise of incentive stock options (“ISOs”). In June 2019, 8.1 million shares authorized for issuance under the 2019 Plan were registered under the Securities Act of 1933, as amended (the “Securities Act”).

The 2010 Plan provided for the grant of incentive stock options, non-statutory stock options, RSUs, RSAs, PSUs, PBOs, stock appreciation rights, and stock purchase rights to our employees, non-employee directors and consultants.

Stock Options

The option exercise price for incentive stock options must be at least 100% of the fair value of our common stock on the date of grant and the option exercise price for non-statutory stock options is at least 85% of the fair value of our common stock on the date of grant, as determined by the Board. If, at the time of a grant, the optionee directly or by attribution owns stock possessing more than 10% of the total combined voting power of all of our outstanding capital stock, the exercise price for these options must be at least 110% of the fair value of the underlying common stock. Stock options granted to employees generally have a maximum term of ten years and vest over four years from the date of grant, of which 25% vest at the end of one year, and 75% vest monthly over the remaining three years. We may grant options with different vesting terms from time to time. Unless an employee's termination of service is due to disability or death, upon termination of service, any unexercised vested options will be forfeited at the end of three months or the expiration of the option, whichever is earlier.

Restricted Stock Units ("RSUs")

We also grant employees RSUs, which generally vest over either a three year period with 33% of the shares subject to the RSUs vesting on each yearly anniversary of the vesting commencement date or over a four year period with 25% of the shares subject to the RSU vesting on each yearly anniversary of the vesting commencement date, in each case contingent upon such employee’s continued service on such vesting date. RSUs are generally subject to forfeiture if employment terminates prior to the release of vesting restrictions. We may grant RSUs with different vesting terms from time to time.

Performance-contingent Restricted Stock Units ("PSUs") and Performance Based Options ("PBOs")

The compensation committee of the Board approved, solely in respect of non-executive employees, delegated to our Chief Executive Officer the authority to approve grants of PSUs. The compensation committee of the Board also approved grants of PBOs and PSUs to our executives. The PSUs and PBOs vest based upon both the successful achievement of certain corporate operating milestones in specified timelines and continued employment through the applicable vesting date. When the performance goals are deemed to be probable of achievement for these types of awards, recognition of stock-based

compensation expense commences. Once the number of shares eligible to vest is determined, those shares vest intwo equal installments with 50% vesting upon achievement and the remaining 50% vesting on the first anniversary of achievement, in each case, subject to the recipient's continued service through the applicable vesting date. If the performance goals are achieved at the threshold level, the number of shares eligible to vest in respect of the PSUs and PBOs would be equal to half the number of PSUs granted and one-quarter the number of shares underlying the PBOs granted. If the performance goals are achieved at the target level, the number of shares eligible to vest in respect of the PSUs and PBOs would be equal to the number of PSUs granted and half of the shares underlying the PBOs granted. If the performance goals are achieved at the superior level, the number of shares eligible to vest in respect of the PSUs would be equal to two times the number of PSUs granted and equal to the number of PBOs granted. The number of shares issuable upon achievement of the performance goals at the levels between the threshold and target levels for the PSUs and PBOs or between the target level and superior levels for the PSUs would be determined using linear interpolation. Achievement below the threshold level would result in no shares being eligible to vest in respect of the PSUs and PBOs.

In the first quarter of 2021, we awarded PSUs ("2021 PSUs") and PBOs ("2021 PBOs"), each of which commence vesting based upon the achievement of various weighted performance goals, including corporate revenue, performance enzyme segment gross margin, major new biotherapeutics publicity events, strategic performance enzyme and biotherapeutics deliverables, safety, and technology and strategic plan development. As of September 30, 2021, we estimated that the 2021 PSUs and 2021 PBOs performance goals would be achieved at 146% and 73% of the target level, respectively, and recognized stock-based compensation expenses accordingly.

In 2020, we awarded PSUs ("2020 PSUs") and PBOs ("2020 PBOs"), each of which commenced vesting based upon the achievement of various weighted performance goals, including corporate revenue, performance enzyme segment gross margin, major new biotherapeutics publicity events, strategic performance enzyme and biotherapeutics deliverables, and strategic plan development. In the first quarter of 2021, we determined that the 2020 PSUs and 2020 PBOs performance goals had been achieved at 88% of the target level, and recognized expenses accordingly. Accordingly, 50% of the shares underlying the 2020 PSUs and PBOs vested in the first quarter of 2021 and50% of the shares underlying the 2020 PSUs and PBOs will vest in the first quarter of 2022, in each case, subject to the recipient's continued service on each vesting date.

In 2019, we awarded PSUs ("2019 PSUs") and PBOs ("2019 PBOs"), each of which commenced vesting based upon the achievement of various weighted performance goals, including sustained revenue and performance enzyme growth, strategic advancement of biotherapeutics, cash balance and strategic plan development. In the first quarter of 2020, we determined that the 2019 PSUs and 2019 PBOs performance goals had been achieved at 84% of the target level, and recognized expenses accordingly. Accordingly, 50% of the shares underlying the 2019 PSUs and PBOs vested in the first quarter of 2020 and50% of the shares underlying the 2019 PSUs and PBOs vested in the first quarter of 2021, in each case, subject to the recipient's continued service on each vesting date.

Stock-Based Compensation Expense

Stock-based compensation expense is included in the unaudited condensed consolidated statements of operations as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Research and development	$ 652	$ 385	$ 1,726	$ 1,279
Selling, general and administrative	2,364	1,599	6,821	4,813
Total	$ 3,016	$ 1,984	$ 8,547	$ 6,092

The following table presents total stock-based compensation expense by security type included in the unaudited condensed consolidated statements of operations (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Stock options	$ 693	$ 619	$ 2,040	$ 1,735
RSUs and RSAs	742	603	1,974	1,812
PSUs	640	295	1,683	922
PBOs	941	467	2,850	1,623
Total	$ 3,016	$ 1,984	$ 8,547	$ 6,092

As of September 30, 2021, unrecognized stock-based compensation expense, net of expected forfeitures, was $4.4 million related to unvested stock options, $4.0 million related to unvested RSUs and RSAs, $1.5 million related to unvested PSUs, and $2.6 million related to unvested PBOs based on current estimates of the level of achievement. Stock-based compensation expense for these awards will be recognized through the year of 2025.

Note 9. Capital Stock

Exercise of Options

For the nine months ended September 30, 2021 and 2020, we issued 422,964 and 87,240 shares, respectively, upon option exercises at a weighted-average exercise price of $6.45 and $6.17 per share, respectively, with net cash proceeds of $2.7 million and $0.5 million, respectively.

Equity Distribution Agreement

We filed a Registration Statement on Form S-3 with the SEC, under which we may sell common stock, preferred stock, debt securities, warrants, purchase contracts, and units from time to time in one or more offerings. The registration statement became effective on May 7, 2021. In May 2021, we entered into an Equity Distribution Agreement ("EDA") with Piper Sandler & Co ("PSC"), under which PSC, as our exclusive agent, at our discretion and at such times that we may determine from time to time, may sell over a three-year period from the execution of the EDA up to a maximum of $50.0 million of shares of our common stock. Under the terms of the EDA, PSC may sell the shares at market prices by any method that is deemed to be an “at the market offering” as defined in Rule 415 under the Securities Act of 1933, as amended.

We are not required to sell any shares at any time during the term of the EDA. The EDA will terminate upon the earlier of: (i) the issuance and sale of all shares through PSC on the terms and conditions of the EDA, or (ii) the termination of the EDA in accordance with its terms. Either party may terminate the EDA at any time upon written notification to the other party in accordance with the EDA, and upon such notification, the offering will terminate. Under no circumstances shall any shares be sold pursuant to the EDA after the date which is three years after the registration statement is first declared effective by the SEC. We agreed to pay PSC a commission of 3% of the gross sales price of any shares sold pursuant to the EDA. With the exception of certain expenses, we will pay PSC up to 8% of the gross sales price of the shares sold pursuant to the EDA for a combined amount of commission and reimbursement of PSC's expenses and fees.

During the three and nine months ended September 30, 2021, no shares of our common stock were issued pursuant to the EDA. As of September 30, 2021, $0.0 million of shares remained available for sale under the EDA.

Note 10. Commitments and Contingencies

Operating Leases

Our headquarters are located in Redwood City, California, where we occupy approximately 77,300 square feet of office and laboratory space in multiple buildings within the same business park of Metropolitan Life Insurance Company ("MetLife"). Our lease agreement with MetLife ("RWC Lease") includes approximately 28,200 square feet of space located at 200 and 220 Penobscot Drive, Redwood City, California (the “200/220 Penobscot Space”) and approximately 37,900 square feet of space located at 400 Penobscot Drive, Redwood City, California (the “400 Penobscot Space”) (the 200/220 Penobscot Space and the 400 Penobscot Space are collectively referred to as the “Penobscot Space”), and approximately 11,200 square feet of space located at 501 Chesapeake Drive, Redwood City, California (the “501 Chesapeake Space”).

Until the end of January 2020, we also leased approximately 29,900 square feet of space located at 101 Saginaw Drive, Redwood City, California (the “Saginaw Space”). During January 2020, we subleased approximately 26,500 square feet of the Saginaw Space to Minerva Surgical, Inc. The lease and sublease for the Saginaw Space both expired at the end of January 2020. During the period from February 1, 2020 through April 30, 2020, we subleased approximately 3,400 square feet at 101 Saginaw Drive from Minerva Surgical, Inc. The sublease expired at the end of April 2020.

We entered into the initial lease with MetLife for our facilities in Redwood City in 2004 and the RWC Lease has been amended multiple times since then to adjust the leased space and terms of the Lease. In February 2019, we entered into an Eighth Amendment to the Lease (the “Eighth Amendment”) with MetLife with respect to the Penobscot Space and the 501 Chesapeake Space to extend the term of the Lease for additional periods. Pursuant to the Eighth Amendment, the term of the lease of the Penobscot Space has been extended through May 2027. The lease term for the 501 Chesapeake Space has been

extended to May 2029. We have one (1) option to extend the term of the lease for the Penobscot Space for five (5) years, and one (1) separate option to extend the term of the lease for the 501 Chesapeake Space for five (5) years.

We are required to restore certain areas of the Redwood City facilities that we are renting to their original form. We are expensing the asset retirement obligation over the terms of the respective leases. We review the estimated obligation each reporting period and make adjustments if our estimates change. We recorded asset retirement obligations of $0.3 million as of September 30, 2021 and December 31, 2020, which are included in other long-term liabilities in the unaudited condensed consolidated balance sheets. Accretion expense related to our asset retirement obligations was nominal in the three and nine months ended September 30, 2021 and 2020.

Pursuant to the terms of the RWC Lease, we exercised our right to deliver a letter of credit in lieu of a security deposit. The letter of credit is collateralized by deposit balances held by the bank in the amount of $1.0 million as of September 30, 2021 and December 31, 2020 and are recorded as non-current restricted cash on the unaudited condensed consolidated balance sheets.

We entered into a short-term office lease in San Carlos, California during the second quarter of 2021 and this lease will expire in April 2022. Our remaining future commitment pursuant to this lease is $0.1 million as of September 30, 2021.

Finance Leases

In December 2016, we entered into athree-year financing lease agreement with a third party supplier for the purchase of laboratory equipment that was partially financed through a finance lease of $0.4 million. The lease became effective upon delivery of the equipment in February 2017, and the term of thethree-year lease was from February 2017 and expired in February 2020. This financing agreement was accounted for as a finance lease due to bargain purchase options at the end of the lease. In April 2017, we entered into a three-year financing lease agreement with a third-party supplier for the purchase of information technology equipment for $0.3 million. The effective term of the three-year lease was from May 2017 and expired in April 2020.

Lease and other information

Lease costs, amounts included in measurement of lease obligations and other information related to non-cancellable operating leases and finance leases were as follows (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Finance lease costs:				
Amortization of right-of-use assets	$ 26	$ 27	$ 79	$ 126
Interest on lease obligations	—	—	—	1
Finance lease costs	26	27	79	127
Operating lease cost	1,032	1,033	3,097	3,133
Short-term lease costs [1]	30	—	40	47
Sublease income	—	—	—	(55)
Total lease cost [2]	$ 1,088	$ 1,060	$ 3,216	$ 3,252

[1] Short-term lease costs on leases with terms of over one month and less than one year.
[2] The Company had no variable lease costs.

Other information:	Operating Leases
Weighted-average remaining lease term (in years)	5.9 years
Weighted-average discount rate	6.6 %

	Nine months ended September 30,	
Cash paid:	2021	2020
Operating cash flows from operating leases	$ 3,145	$ 1,795
Financing cash flows from finance leases	$ —	$ 60

As of September 30, 2021, our maturity analysis of annual undiscounted cash flows of the non-cancellable operating leases are as follows (in thousands):

Years ending December 31,	Operating Leases
2021 (remaining 3 months)	$ 1,052
2022	4,285
2023	4,589
2024	4,726
2025	4,868
2026 and thereafter	8,626
Total minimum lease payments	28,146
Less: imputed interest	5,146
Lease obligations	$ 23,000

Future Lease Commitment

In the first quarter of 2021, we entered into a lease agreement with ARE-San Francisco No. 63, LLC ("ARE") to lease a portion of a facility comprising approximately 36,593 rentable square feet in San Carlos, California to serve as additional office and research and development laboratory space (the "San Carlos Space"). We expect to commence occupancy of the San Carlos Space in December 2021, once tenant improvements are substantially completed by ARE in accordance with the construction plan. The budget provides a net tenant improvement allowance of $6.3 million and an additional allowance of up to $2.7 million, which we expect to use. ARE will have an enforceable right to payment by us in the form of equal monthly additional rent payments at a certain interest rate through the lease term for the additional allowance. The terms include an initial annualized base rent of $2.5 million, subject to scheduled 3% annual rent increases, an annualized additional allowance payment of $0.4 million, plus certain operating expenses. The lease has a 10-year term from the lease commencement date withone option to extend the term for an additional period of5 years. We have provided ARE with a $0.5 million security deposit in the form of a letter of credit. We have the right to sublease the facility, subject to landlord consent. We determined that the lease commencement date is in December 2021, at which point we will record a right of use asset and a corresponding operating lease liability.

An estimated maturity analysis of the annual undiscounted cash flows of the lease is as follows (in thousands):

Years ending December 31,	Operating Leases
2021 (remaining 3 months)	$ —
2022	2,463
2023	2,988
2024	3,066
2025	3,145
2026 and thereafter	20,061
Total minimum lease payments	$ 31,723

Other Commitments

We enter into supply and service arrangements in the normal course of business. Supply arrangements are primarily for fixed-price manufacture and supply. Service agreements are primarily for the development of manufacturing processes and certain studies. Commitments under service agreements are subject to cancellation at our discretion which may require payment of certain cancellation fees. The timing of completion of service arrangements is subject to variability in estimates of the time required to complete the work.

The following table provides quantitative data regarding our other commitments. Future minimum payments reflect amounts that we expect to pay including potential obligations under services agreements subject to risk of cancellation by us (in

thousands):

Other Commitment Agreement Type	Agreement Date	Future Minimum Payment
Manufacture and supply agreement with expected future payment date of December 2022	April 2016	$ 147
Development and manufacturing services agreements	September 2019	686
Total other commitments		$ 833

Credit Facility

In June 30, 2017, we entered into a credit facility (the “Credit Facility”) with Western Alliance Bank consisting of term loans (“Term Debt”) up to $0.0 million, and advances (“Advances”) under a revolving line of credit ("Revolving Line of Credit") up to $5.0 million with an accounts receivable borrowing base of80% of eligible accounts receivable. As of September 30, 2021 and December 31, 2020, we have not drawn from the Credit Facility. We may draw on the Term Debt and the Revolving Line of Credit at any time prior to December 31, 2021 and October 1, 2024, respectively. On October 1, 2024 loans drawn under the Term Debt mature and the Revolving Line of Credit terminate. Loans made under the Term Debt bear interest through maturity equal to the greater of (i) 3.75% or (ii) the sum of (A) Index Rate (prime rate published in the Money Rates section of the Western Edition of The Wall Street Journal plus (B) 0.50%. Advances made under the Revolving Line of Credit bear interest at a variable annual rate equal to the equal to the greater of (i) 4.25% or (ii) the sum of (A) the prime rate plus (B)1.00%.

Our obligations under the Credit Facility are secured by a lien on substantially all of our personal property other than our intellectual property. The Credit Facility includes a number of customary covenants and restrictive financial covenants including meeting minimum product revenue levels and maintaining certain minimum cash levels with the lender. The Credit Facility's financial covenants restrict the ability of the Company to transfer collateral, incur additional indebtedness, engage in mergers or acquisitions, pay dividends or make other distributions, make investments, create liens, sell assets, or sell certain assets held at foreign subsidiaries. A failure to comply with these covenants could permit the lender to exercise remedies against us and the collateral securing the Credit Facility, including foreclosure of our properties securing the Credit Facilities and our cash. As of September 30, 2021, we were in compliance with the covenants for the Credit Facility.

The Credit Facility allows for interest-only payments on the Term Debt through November 1, 2022. Monthly payments of principal and interest on the Term Debt are required following the applicable amortization date. We may elect to prepay in full the Term Debt and Advances under the Revolving Line of Credit at any time.

Legal Proceedings

We are not currently a party to any material pending litigation or other material legal proceedings.

Indemnifications

We are required to recognize a liability for the fair value of any obligations we assume upon the issuance of a guarantee. We have certain agreements with licensors, licensees and collaborators that contain indemnification provisions. In such provisions, we typically agree to indemnify the licensor, licensee and collaborator against certain types of third party claims. The maximum amount of the indemnifications is not limited. We accrue for known indemnification issues when a loss is probable and can be reasonably estimated. There were no accruals for expenses related to indemnification issues for any periods presented.

Note 11. Related Party Transactions

Molecular Assemblies, Inc.

In June 2020, we entered into a Stock Purchase Agreement with MAI pursuant to which we purchased1,587,050 shares of MAI's Series A preferred stock for $1.0 million. In connection with the transaction, John Nicols, our President and Chief Executive Officer, also joined MAI’s board of directors. Concurrently with our initial equity investment, we entered into the MAI Agreement with MAI, pursuant to which we are performing services utilizing our CodeEvolver® protein engineering platform technology to improve DNA polymerase enzymes in exchange for compensation in the form of additional shares of MAI's Series A preferred stock. In April 2021, we purchased an additional 1,000,000 shares of MAI's Series A preferred stock for $0.6 million. In September 2021, we purchased 9,198,423 shares of MAI's Series B preferred stock for $7.0 million.

We recognized $0.2 million and $0.7 million in research and development revenue from transactions with MAI in the three and nine months ended September 30, 2021, respectively, and we recognized $0.5 million of revenue from research and development service transactions with MAI in the three and nine months ended September 30, 2020. We received 476,114 and 1,904,456 shares of MAI's Series A and B preferred stock from research and development services we provided to MAI in the three and nine months ended September 30, 2021, respectively, and 714,171 shares of MAI's Series A preferred stock from research and development services in the three and nine months ended September 30, 2020. As of September 30, 2021, we have 15,118,271 shares of MAI's Series A and B preferred stock that we have earned or purchased since executing the Stock Purchase Agreement with MAI. The carrying value of our investment in MAI Series A and B preferred stock was $11.5 million and $1.5 million at September 30, 2021 and December 31, 2020, respectively. We had $0.5 million and nil in deferred revenue as of September 30, 2021 and December 31, 2020, respectively, and nil and $0.5 million in contract assets due from MAI for services rendered as of September 30, 2021 and December 31, 2020, respectively. Payment for the services rendered was received in the form of additional MAI Series A and Series B preferred stock.

AstraZeneca PLC

Pam P. Cheng, who served as a member of our board of directors until June 2020, joined AstraZeneca PLC as Executive Vice President, Operations and Information Technology in June 2015. We sold biocatalyst products to AstraZeneca PLC and its controlled purchasing agents and contract manufacturers. We recognized $0.1 million of revenue in 2020 through the date of Ms. Cheng's departure from our board of directors. As of December 31, 2020, we had no receivables from AstraZeneca PLC and its controlled purchasing agents and contract manufacturers.

Note 12. Segment, Geographical and Other Revenue Information

Segment Information

We manage our business as two business segments: Performance Enzymes and Novel Biotherapeutics. Our chief operating decision maker ("CODM") is our Chief Executive Officer. Our business segments are primarily based on our organizational structure and our operating results as used by our CODM in assessing performance and allocating resources for the Company.

We report corporate-related expenses such as legal, accounting, information technology, and other costs that are not otherwise included in our reportable business segments as "Corporate costs." All items not included in income (loss) from operations are excluded from the business segments.

We manage our assets on a total company basis, not by business segment, as the majority of our operating assets are shared or commingled. Our CODM does not review asset information by business segment in assessing performance or allocating resources, and accordingly, we do not report asset information by business segment.

Performance Enzymes

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the pharmaceuticals market, and to date this continues to be our largest market served. Our customers, which include many large global pharmaceutical companies, use our technology, products and services in their manufacturing processes and process development. We have also used the technology to develop customized enzymes for use in other industrial markets. These markets consist of several large industrial verticals, including food and food ingredients, animal feed, flavors, fragrances, and agricultural chemicals. We also use our technology to develop enzymes for customers using NGS and PCR/qPCR for in vitro molecular diagnostic and molecular biology research applications.

Novel Biotherapeutics

We are also targeting new opportunities in the pharmaceutical industry to discover, improve, and/or develop biotherapeutic drug candidates. We believe that our CodeEvolver® protein engineering platform technology can be used to discover novel biotherapeutic drug candidates that will target human diseases that are in need of improved therapeutic interventions. Similarly, we believe that we can deploy our platform technology to improve specific characteristics of a customer’s pre-existing biotherapeutic drug candidate, such as its activity, stability or immunogenicity. Most notable is our lead program for the potential treatment of PKU in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient.

We have also developed a pipeline of other biotherapeutic drug candidates, which are in preclinical development, and in which we expect to continue to make additional investments with the aim of advancing additional product candidates targeting other therapeutic areas. In March 2020, we entered into the Takeda Agreement with Takeda under which we will research and develop protein sequences for use in gene therapy products for certain diseases.

Factors considered in determining the two reportable segments of the Company include the nature of business activities, the management structure directly accountable to our CODM for operating and administrative activities, availability of discrete financial information and information presented to the Board of Directors. Our CODM regularly reviews our segments and the approach provided by management for performance evaluation and resource allocation.

Operating expenses that directly support the segment activity are allocated based on segment headcount, revenue contribution or activity of the business units within the segments, based on the corporate activity type provided to the segment. The expense allocation excludes certain corporate costs that are separately managed from the segments. This provides the CODM with more meaningful segment profitability reporting to support operating decisions and allocate resources.

The following table provides financial information by our reportable business segments along with a reconciliation to consolidated income (loss) before income taxes (in thousands):

	Three months ended September 30, 2021			Three months ended September 30, 2020		
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total
Revenues:						
Product revenue	$ 28,731	$ —	$ 28,731	$ 8,401	$ —	$ 8,401
Research and development revenue	3,853	4,185	8,038	4,604	5,380	9,984
Total revenues	32,584	4,185	36,769	13,005	5,380	18,385
Costs and operating expenses:						
Cost of product revenue	6,867	—	6,867	3,642	—	3,642
Research and development[(1)]	5,670	8,850	14,520	5,184	6,433	11,617
Selling, general and administrative[(1)]	3,306	831	4,137	2,675	515	3,190
Total segment costs and operating expenses	15,843	9,681	25,524	11,501	6,948	18,449
Income (loss) from operations	$ 16,741	$ (5,496)	11,245	$ 1,504	$ (1,568)	(64)
Corporate costs [(2)]			(8,097)			(5,483)
Unallocated depreciation and amortization			(794)			(528)
Income (loss) before income taxes			$ 2,354			$ (6,075)

	Nine months ended September 30, 2021			Nine months ended September 30, 2020		
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total
Revenues:						
Product revenue	$ 53,674	$ —	$ 53,674	$ 18,005	$ —	$ 18,005
Research and development revenue	14,723	11,856	26,579	13,380	16,638	30,018
Total revenues	68,397	11,856	80,253	31,385	16,638	48,023
Costs and operating expenses:						
Cost of product revenue	15,403	—	15,403	7,882	—	7,882
Research and development[1]	17,172	20,649	37,821	15,877	16,848	32,725
Selling, general and administrative[1]	9,294	2,052	11,346	7,395	1,728	9,123
Total segment costs and operating expenses	41,869	22,701	64,570	31,154	18,576	49,730
Income (loss) from operations	$ 26,528	$ (10,845)	15,683	$ 231	$ (1,938)	(1,707)
Corporate costs [2]			(24,431)			(16,526)
Unallocated depreciation and amortization			(2,220)			(1,526)
Loss before income taxes			$ (10,968)			$ (19,759)

[1] Research and development expenses and selling, general and administrative expenses exclude depreciation and amortization of finance leases.
[2] Corporate costs include unallocated selling, general and administrative expenses, interest income, and other income (expense), net.

The following table provides stock-based compensation expense included in income (loss) from operations (in thousands):

	Three months ended September 30,							
	2021				2020			
	Performance Enzymes	Novel Biotherapeutics	Corporate cost	Total	Performance Enzymes	Novel Biotherapeutics	Corporate cost	Total
Stock-based compensation	$ 1,228	$ 272	$ 1,516	$ 3,016	$ 839	$ 132	$ 1,013	$ 1,984

	Nine months ended September 30,							
	2021				2020			
	Performance Enzymes	Novel Biotherapeutics	Corporate cost	Total	Performance Enzymes	Novel Biotherapeutics	Corporate cost	Total
Stock-based compensation	$ 3,337	$ 767	$ 4,443	$ 8,547	$ 2,335	$ 625	$ 3,132	$ 6,092

Significant Customers

Customers that each accounted for 10% or more of our total revenues were as follows:

	Percentage of Total Revenues for the			
	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Customer A	51%	*	29%	*
Customer B	*	13%	10%	*
Customer C	*	23%	12%	21%
Customer D	*	14%	*	22%
Customer E	*	15%	*	13%
Customer F	*	*	*	11%

* Percentage was less than 10%

Customers that each accounted for 10% or more of accounts receivable balances as of the periods presented as follows:

	Percentage of Accounts Receivables as of	
	September 30, 2021	December 31, 2020
Customer A	34%	*
Customer C	11%	32%
Customer E	14%	13%
Customer F	*	25%

* Percentage was less than 10%

Geographical Information

Geographic revenues are identified by the location of the customer and consist of the following (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Revenues				
Americas	$ 7,816	$ 5,841	$ 18,588	$ 17,972
EMEA	4,685	4,889	17,135	14,175
APAC	24,268	7,655	44,530	15,876
Total revenues	$ 36,769	$ 18,385	$ 80,253	$ 48,023

Identifiable long-lived assets by location was as follows (in thousands):

	September 30, 2021	December 31, 2020
United States	$ 35,645	$ 31,176

Identifiable goodwill by reporting unit was as follows (in thousands):

	As of September 30, 2021 and December 31, 2020		
	Performance Enzymes	Novel Biotherapeutics	Total
Goodwill	$ 2,463	$ 778	$ 3,241

Note 13. Allowance for Credit Losses

The following table summarizes the financial assets allowance for credit losses (in thousands):

	September 30, 2021	December 31, 2020
Allowance for credit losses	$ 74	$ 74

The following tables summarize accounts receivable by aging category (in thousands):

	September 30, 2021				
	Current	31-60 Days	61-90 Days	91 Days and over	Total balance
Accounts receivable	$ 22,328	$ 1,869	$ 847	$ 40	$ 25,084

	December 31, 2020				
	Current	31-60 Days	61-90 Days	91 Days and over	Total balance
Accounts receivable	$ 13,398	$ 489	$ 7	$ —	$ 13,894

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following management's discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and the related notes thereto included elsewhere in this Quarterly Report on Form 10-Q and the audited consolidated financial statements and notes thereto and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2020 included in our Annual Report on Form 10-K for the year ended December 31, 2020, as filed with the SEC on March 1, 2021 (the "Annual Report"). This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements include, but are not limited to, expectations regarding our strategy, business plans, financial performance and developments relating to our industry. These statements are often identified by the use of words such as "may," "will," "expect," "believe," "anticipate," "intend," "could," "should," "estimate," or "continue," and similar expressions or variations. Such forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in Part II, Item 1A: "Risk Factors" of this Quarterly Report on Form 10-Q and Part I, Item 1A: "Risk Factors" of our Annual Report, as incorporated herein and referenced in Part II, Item 1A: "Risk Factors" of this Quarterly Report on Form 10-Q and elsewhere in this report. The forward-looking statements in this Quarterly Report on Form 10-Q represent our views as of the date of this Quarterly Report on Form 10-Q. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Quarterly Report on Form 10-Q.

Business Overview

We discover, develop and sell enzymes and other proteins that deliver value to our clients in a growing set of industries. We view proteins as a vast, largely untapped source of value-creating products, and we are using our proven technologies, which we have been continuously improving since our inception in 2002, to commercialize an increasing number of novel enzymes, both as proprietary Codexis products and in partnership with our customers.

We are a pioneer in harnessing computational technologies to drive biology advancements. Since 2002, we have made substantial investments in the development of our CodeEvolver® protein engineering technology platform, the primary source of our competitive advantage. Our technology platform is powered by proprietary, artificial intelligence-based, computational algorithms that rapidly mine the structural and performance attributes of our large and continuously growing library of protein variants. These computational outputs enable increasingly reliable predictions for next generation protein variants to be engineered, enabling time- and cost-efficient delivery of the targeted performance enhancements. In addition to its computational prowess, our CodeEvolver® protein engineering technology platform integrates additional modular competencies, including robotic high-throughput screening and genomic sequencing, organic chemistry and bioprocess development which are all coordinated to rapidly innovate novel, fit-for-purpose products.

The core historical application of the technology has been in developing commercially viable biocatalytic manufacturing processes for more sustainable production of complex chemicals. This begins by conceptually designing the most cost-effective and practical process for a targeted product. We then develop optimized biocatalysts to enable the designed process, using our CodeEvolver® platform. Engineered biocatalyst candidates, numbering many thousands for each project, are then rapidly screened and validated using high throughput methods under process-relevant operating conditions. This approach results in an optimized biocatalyst that enables cost-efficient processes that are relatively simple to run in conventional manufacturing equipment. This also allows for efficient technical transfer of our processes to our manufacturing partners.

The successful embodiment of our CodeEvolver® protein engineering technology platform in commercial manufacturing processes requires well-integrated expertise in a number of technical disciplines. In addition to those competencies directly integrated in our CodeEvolver® protein engineering platform, such as molecular biology, enzymology, microbiology, cellular engineering, metabolic engineering, bioinformatics, biochemistry and high throughput analytical chemistry, our process development projects also involve integrated expertise in organic chemistry, chemical process development, chemical engineering, bioprocess development and fermentation engineering. Our integrated, multi-disciplinary approach to product and process development is a critical success factor for the Company.

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the manufacture of small molecule pharmaceuticals, which remains a primary business focus. Our customers, which include many large, global

pharmaceutical companies, use our technology, products and services in their process development and in manufacturing. Additionally, we have licensed our proprietary CodeEvolver® protein engineering technology platform to global pharmaceutical companies enabling them to use this technology, in house, to engineer enzymes for their own businesses. Most recently, in May 2019, we entered into the Novartis CodeEvolver® Agreement with Novartis. The Novartis CodeEvolver® Agreement (our third such agreement with large pharma companies) allows Novartis to use our proprietary CodeEvolver® protein engineering platform technology in the field of human healthcare.

As evidence of our strategy to extend our technology beyond pharmaceutical manufacturing, we have also used the technology to develop biocatalysts and enzyme products for use in a broader set of industrial markets, including several large verticals, such as food, feed, consumer care and fine chemicals. In addition, we are using our technology to develop enzymes for various life science related applications, such as next generation sequencing ("NGS") and polymerase chain reaction ("PCR/qPCR") for in vitro molecular diagnostic and genomic research applications. In December 2019, we entered into a license agreement to provide Roche Sequencing Solutions, Inc. with our first enzyme for this target market: the Company's EvoT4™ DNA ligase. In June 2020, we entered into a co-marketing and enzyme supply collaboration agreement with Alphazyme LLC for the production and co-marketing of enzymes for life science applications including, initially, high-fidelity DNA polymerase, T7 RNA polymerase and reverse transcriptase enzymes.

We have been using the CodeEvolver® protein engineering technology platform to develop early stage, novel biotherapeutic product candidates, both in partnership with customers and for our own proprietary Codexis drug candidates. Our first program was for the potential treatment of phenylketonuria ("PKU") in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient. In October 2017, we entered into the Nestlé License Agreement with Nestlé Health Science to advance CDX-6114, our enzyme biotherapeutic product candidate for the potential treatment of PKU. In February 2019, Nestlé Health Science exercised its option to obtain an exclusive license to develop and commercialize CDX-6114. Also in October 2017, we entered into the Nestlé SCA pursuant to which we and Nestlé Health Science are collaborating to leverage the CodeEvolver® platform technology to develop other novel enzymes for Nestlé Health Science's established Consumer Care and Medical Nutrition business areas. In January 2020, we entered into a development agreement with Nestlé Health Science to advance a new lead candidate discovered under the Nestlé SCA, CDX-7108, into preclinical development and early clinical studies as a potential treatment for a gastrointestinal disorder. In parallel, the Nestlé SCA was extended through December 2021 to support the discovery of therapeutic candidates for additional disorders.

In March 2020, we entered into the Takeda Agreement with Shire Human Genetic Therapies, Inc., a wholly-owned subsidiary of Takeda, for the research and development of novel gene therapies for certain disease indications, including the treatment of lysosomal storage disorders and a blood factor deficiency.

In June 2020, we entered into the MAI Agreement with Molecular Assemblies, Inc. ("MAI") pursuant to which we are leveraging our CodeEvolver® platform technology to improve the DNA polymerase enzymes that are critical for enzymatic DNA synthesis. Concurrently with the MAI Agreement, we purchased 1,587,050 shares of MAI's Series A preferred stock for $1.0 million and, in connection with the transaction, John Nicols, our President and Chief Executive Officer, joined MAI's board of directors. In April 2021, we purchased an additional 1,000,000 shares of MAI's Series A preferred stock for $0.6 million. In September 2021, we purchased 9,198,423 shares of MAI's Series B preferred stock for $7.0 million. We anticipate completing an enzyme engineering project with MAI in the first quarter of 2022.

Business Segments

We manage our business as two business segments: Performance Enzymes and Novel Biotherapeutics. See Note 12, "Segment, Geographical and Other Revenue Information" in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q.

Performance Enzymes

We initially commercialized our CodeEvolver® protein engineering technology platform and products in the manufacture of small molecule pharmaceuticals and, to date, this continues to be our largest market served. Our customers, which include many large global pharmaceutical companies, use our technology, products and services in their manufacturing processes and process development. We have also used the technology to develop customized enzymes for use in other industrial markets. These markets consist of several large industrial verticals, including food, feed, consumer care, and fine chemicals. We also use our technology in the life sciences markets to develop enzymes for customers using NGS and PCR/qPCR for in vitro molecular diagnostic and molecular biology research applications, as well DNA/RNA synthesis and health monitoring applications.

Novel Biotherapeutics

We are also targeting new opportunities in the pharmaceutical industry to discover, improve, and/or develop biotherapeutic drug candidates. We believe that our CodeEvolver® protein engineering platform technology can be used to discover novel biotherapeutic drug candidates that will target human diseases that are in need of improved therapeutic interventions. Similarly, we believe that we can deploy our platform technology to improve specific characteristics of a customer's pre-existing biotherapeutic drug candidate, such as its activity, stability or immunogenicity. Our first lead program was for the potential treatment of PKU in humans. PKU is an inherited metabolic disorder in which the enzyme that converts the essential amino acid phenylalanine into tyrosine is deficient. In October 2017, we announced a global development, option and license agreement with Nestlé Health Science to advance CDX-6114, our own novel orally administrable enzyme therapeutic candidate for the potential treatment of PKU. In February 2019, Nestlé Health Science exercised its option to obtain an exclusive, worldwide, royalty-bearing, sub-licensable license for the global development and commercialization of CDX-6114 for the management of PKU. Upon exercising its option, Nestlé Health Science assumed all responsibilities for future clinical development and commercialization of CDX-6114. During 2020, Nestlé Health Science completed a safety, tolerability and PK/PD study of CDX-6114 in PKU patients that demonstrated CDX-6114 was well tolerated at all doses tested. In addition, an increase in blood levels of cinnamic acid, a biomarker of enzyme activity, was observed which is consistent with the intended mode of action for CDX-6114.

In October 2017, we separately entered into the Nestlé SCA with Nestlé Health Science pursuant to which we and Nestlé Health Science are collaborating to leverage the CodeEvolver® platform technology to develop other novel enzymes for Nestlé Health Science's established Consumer Care and Medical Nutrition business areas. The Nestlé SCA was extended through December 2021. In January 2020, we and Nestlé Health Science entered into a development agreement pursuant to which we and Nestlé Health Science are collaborating to advance into preclinical and early clinical studies a lead candidate targeting a gastrointestinal disorder, CDX-7108, discovered through the Nestlé SCA. During 2021, we, together with Nestlé Health Science, continued to advance CDX-7108 towards initiation of a Phase 1 clinical trial which commenced in October 2021. Additionally, the parties are progressing three programs under the Nestlé SCA targeting different gastrointestinal disorders.

In March 2020, we entered into the Takeda Agreement pursuant to which we are collaborating to research and develop protein sequences for use in gene therapy products for certain disease indications in accordance with the respective program plans for Fabry Disease, Pompe Disease, and an undisclosed blood factor deficiency. In March 2020, we received a one-time, non-refundable cash payment of $8.5 million. Of these programs, the Fabry disease program is the most advanced, with multiple sequences, including CDX-6311, having been provided to Takeda. In May 2021, Takeda elected to exercise their option to initiate an additional program for a certain undisclosed rare genetic disorder, as a result we received the option exercise fee during the third quarter of 2021.

For further description of our business segments, see Note 12, "Segment, Geographical and Other Revenue Information" in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q.

Business Update Regarding COVID-19

We are subject to risks and uncertainties as a result of the current COVID-19 pandemic. The COVID-19 pandemic has presented a substantial public health and economic challenge around the world and is affecting our employees, communities and business operations, as well as the U.S. economy and other economies worldwide. The full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations and financial condition will depend on future developments that are highly uncertain and may not be accurately predicted, including the duration and severity of the pandemic, the prevalence of more contagious and or virulent variants, and the extent and severity of the impact on our customers, new information that may emerge concerning COVID-19, the actions taken to contain it or treat its impact and the economic impact on local, regional, national and international markets.

To date, we and our collaboration partners have been able to continue to supply our enzymes to our customers worldwide. However, we are dependent on our manufacturing and logistics partners and consequently, disruptions in operations of our partners and customers may affect our ability to supply enzymes to our customers. Furthermore, our ability to provide future research and development ("R&D") services will continue to be impacted as a result of governmental orders and any disruptions in operations of our customers with whom we collaborate. We believe that these disruptions have had a minimal impact on revenue for the three and nine months ended September 30, 2021. The extent to which the pandemic may impact our business operations and operating results will continue to remain highly dependent on future developments, which are uncertain and cannot be predicted with confidence.

In the United States, the impact of COVID-19, including governmental orders ("Orders") governing the operation of businesses during the pandemic, caused the temporary closure of our Redwood City, California facilities and disrupted our

R&D operations. R&D operations for several projects were temporarily suspended from mid-March 2020 through the end of April 2020 in accordance with these Orders. In May 2020, we re-initiated limited R&D operations and have ramped up operations such that we are currently utilizing our normal R&D capacity while following county, state and federal COVID-19 guidance for the protection of our employees. Additionally, we resumed manufacturing at our Redwood City pilot plant in May 2020.

Our future results of operations and liquidity could be adversely impacted by delays in payments of outstanding receivable amounts beyond normal payment terms, supply chain disruptions and uncertain demand, and the impact of any initiatives or programs that we may undertake to address financial and operations challenges faced by our customers. The near-and-long term impact of COVID-19 to our financial condition, liquidity, or results of operations in the future remains uncertain. Although some of the Orders that were enacted to control the spread of COVID-19 have begun to be scaled back and the vaccine rollout has expanded, surges in the spread of COVID-19 due to the emergence of new more contagious or virulent variants or the ineffectiveness of the vaccines against such strains, may result in the reimplementation of certain Orders, which could adversely impact our business. For additional information on the various risks posed by the COVID-19 pandemic, please read Item 1A. Risk Factors included in our Annual Report on Form 10-K, for the fiscal year ended December 31, 2020, filed on March 1, 2021.

Results of Operations Overview

Revenues were $36.8 million in the third quarter of 2021, a 100% increase from $18.4 million in the third quarter of 2020.

Product revenue, which consists primarily of sales of biocatalysts, pharmaceutical intermediates, and Codex® biocatalyst panels and kits, was $28.7 million in the third quarter of 2021, an increase of 242% from $8.4 million in the third quarter of 2020. The increase in product revenue was primarily due to an increase in customer demand for branded pharmaceutical products. We expect the demand for our products for the rest of the year to be higher than the comparative periods in the prior year mainly due to overall higher demand for enzymes used in the manufacture of branded pharmaceutical products and a total of three large purchase orders from Pfizer, Inc. for an aggregate amount of $29.0 million of a proprietary high enzyme product that we received in June and August 2021, and that will continue to be recognized as revenue in subsequent periods.

Research and development revenues, which include license, technology access and exclusivity fees, research service fees, milestone payments, royalties, and optimization and screening fees, totaled $8.0 million in the third quarter of 2021, a 19% decrease compared with $10.0 million in the third quarter of 2020. The decrease in research and development revenue was primarily due to lower license fees from Takeda under the Takeda Agreement and lower revenue from Novartis under the Novartis CodeEvolver® Agreement being recognized this year compared to the same period in the prior year.

Our products' profitability is affected by many factors including the margin of profit onthe products we sell. Our profit margins are affected by many factors including the costs of internal and third-party fixed and variable costs, including materials and supplies, labor, facilities and other overhead costs. Profit margin data is used as a management performance measure to provide additional information regarding our results of operations on a consolidated basis. Product gross margins increased to 76% in the third quarter of 2021, compared to 57% in the third quarter of 2020, due to improved product mix resulting from an increase in customer demand for branded products.

Research and development expenses were $15.2 million in the third quarter of 2021, an increase of 26% from $12.0 million in the third quarter of 2020. The increase was primarily due to increases in costs associated with higher headcount, higher depreciation expense and higher lab supplies costs, partially offset by a reduction in costs associated with outside services related to Chemistry, Manufacturing and Controls ("CMC") and regulatory expenses and a decrease in allocable expenses. We expect research and development expenses for the rest of the year to be higher than the comparative periods in the prior year mainly due to increase in headcount as we continue our efforts on advancing our internal and collaborative programs.

Selling, general and administrative expenses were $13.4 million in the third quarter of 2021, an increase of 52%, compared to $8.8 million in the third quarter of 2020. The increase was primarily due to increases in expenses associated with a higher headcount, increase in legal expenses, and higher stock-based compensation expense, partially offset by lower travel and allocable expenses. We expect selling, general and administrative expenses for the rest of the year to be higher than the comparative periods in prior year mainly due to increase in headcount and higher operating costs as we invest more in our business.

We recognized $0.1 million in income tax expense in the third quarter of2021 due to income tax withholding imposed by foreign taxing authorities on income earned in certain countries outside of the United States and remitted to the United States. We recognized $19.0 thousand provision for income taxes for the third quarter 2020 due to the accrual of interest and penalties on historical uncertain tax positions

Net income was $2.2 million, or $0.03 per basic and diluted share in the third quarter of 2021 compared to a net loss of $6.1 million, or $0.10 per basic and diluted share for the third quarter of 2020. The increase in net income is primarily related to increase in product revenues and margins, which were partially offset by increases in operating expenses.

Cash and cash equivalents decreased to $119.2 million as of September 30, 2021 compared to $149.1 million as of December 31, 2020 In addition, net cash used in operating activities was $14.9 million in the nine months ended September 30, 2021 as compared to $15.0 million in the nine months ended September 30, 2020. We believe that based on our current level of operations, our existing cash and cash equivalents will provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next 12 months.

In June 2017, we entered into a loan and security agreement with Western Alliance Bank that allows us to borrow up to $10.0 million under a term loan, and up to $5.0 million under a revolving credit facility with 80% of certain eligible accounts receivable as a borrowing base (the "Credit Facility"). Obligations under the Credit Facility are secured by a lien on substantially all of our personal property other than our intellectual property. In September 2021, we entered into the Ninth Amendment to the Credit Facility whereby we may draw on the term debt and the Revolving Line of Credit at any time prior to December 31, 2021 and October 1, 2024, respectively. Draws on the term debt are subject to customary conditions for funding including, among others, that no event of default exists. As of September 30, 2021, no amounts were borrowed under the Credit Facility and we were in compliance with the covenants for the Credit Facility. See Note 10, "Commitments and Contingencies" in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q.

Below is an overview of our results of operations by business segments:

Performance Enzymes

Revenues increased by $19.6 million, or 151%, to $32.6 million in the third quarter of 2021, compared to $13.0 million in the third quarter of 2020 primarily due to higher product revenue. The increase in product revenue of $20.3 million, or 242%, to $28.7 million in the third quarter of 2021, compared to $8.4 million in the third quarter of 2020 was primarily due to higher customer demand for enzymes for the manufacture of branded pharmaceuticals products.We expect the demand for our products for the rest of the year to be higher than the comparative periods in the prior year mainly due to overall higher demand for enzymes used in the manufacture of branded pharmaceutical products and a total of three large purchase orders from Pfizer, Inc. for an aggregate amount of $29.0 million of a proprietary high enzyme product that we received in June and August 2021 and that will continue to be recognized as revenue in subsequent periods.

The decrease in research and development revenue of $0.8 million, or 16%, to $3.9 million in the third quarter of 2021, compared to $4.6 million in third quarter of 2020 was primarily due to lower revenues from the Novartis CodeEvolver® Agreement as we completed the technology transfer to Novartis during the third quarter of 2021, but were partially offset by higher license fees from existing collaboration agreements.

Product gross margins were 76% in the third quarter of 2021, compared to 57% in the third quarter of 2020. The increase in product gross margins was primarily due to improved product mix due to higher demand for enzymes for the manufacture of branded pharmaceutical products.

Research and development expense increased by $0.5 million, or 9%, to $5.7 million for the third quarter of 2021, compared to $5.2 million in the third quarter of 2020. The increase was primarily due to an increase in costs associated with higher headcount, higher outside services expenses, and higher lab supplies, partially offset by lower allocable expenses.

Selling, general and administrative expense increased by $0.6 million, or 24%, to $3.3 million for the third quarter of 2021, compared to $2.7 million in the third quarter of 2020. The increase was primarily due to an increase in costs associated with higher headcount and allocable expenses, partially offset by lower outside services expenses.

We expect both research and development expenses and selling, general and administrative expenses for the rest of the year to be higher than the comparative periods in the prior year mainly due to increase in headcount as we invest more in our business.

Novel Biotherapeutics

Research and development revenues decreased by $1.2 million, to $4.2 million in the third quarter of 2021, compared to $5.4 million in the third quarter of 2020.The decrease in research and development revenue was primarily due to lower license and research and development fees from Takeda under the Takeda Agreement recognized this year compared to the prior year.

Research and development expense increased by $2.4 million, or 38%, to $8.9 million for the third quarter of 2021, compared to $6.4 million in the third quarter of 2020. The increase was primarily due to higher costs associated with higher

headcount and allocable expenses, but offset by reduction in outside services related to CMC and regulatory expenses. We expect research and development expenses for the rest of the year to be higher than the comparative periods in prior year mainly due to increase in headcount as we continue our efforts on advancing our internal and collaborative programs.

Selling, general and administrative expense increased by $0.3 million, or 61%, to $0.8 million in the third quarter of 2021, compared to $0.5 million in the third quarter of 2020. The increase was primarily due to increase in costs associated with higher headcount and higher allocable expenses, partially offset by lower outside services expenses.

Merck Sitagliptin Catalyst Supply Agreement

In February 2012, we entered into a five-year Sitagliptin Catalyst Supply Agreement ("Sitagliptin Supply Agreement") with Merck whereby Merck may obtain commercial scale enzyme for use in the manufacture of Januvia®, its product based on the active ingredient sitagliptin. In December 2015, Merck exercised its option under the terms of the Sitagliptin Catalyst Supply Agreement to extend the agreement for an additional five years through February 2022. In September 2021, the Sitagliptin Catalyst Supply Agreement was amended to extend the agreement through December 2026.

Effective as of January 2016, we and Merck amended the Sitagliptin Supply Agreement to prospectively provide for variable pricing based on the cumulative volume of sitagliptin enzyme purchased by Merck.

We have determined that the variable pricing, which provides a discount based on the cumulative volume of sitagliptin enzyme purchased by Merck, provides Merck material rights and we are recognizing product revenues using the alternative method. Under the alternative method, we estimate the total expected consideration and allocate it proportionately with the expected sales.

Pursuant to the terms of the Sitagliptin Supply Agreement, Merck may purchase supply of sitagliptin enzyme from us for a fee based on contractually stated prices. We recognized revenue of $1.9 million and $7.3 million for the three and nine months ended September 30, 2021, respectively, compared to $3.2 million and $7.0 million for the three and nine months ended September 30, 2020, respectively, in product revenue under this contract. Revenues recognized by us under the Sitagliptin Supply Agreement comprised 5% and 9% for the three and nine months ended September 30, 2021, respectively, compared to 17% and 15% for the three and nine months ended September 30, 2020 of our total revenues.

As of September 30, 2021, we recorded revenue of $2.5 million from sitagliptin enzyme that were recognized over time based on the progress of the manufacturing process. These products will be shipped within the six month period following the end of the quarter. The contract asset balances were partially offset by contract liabilities as they are under the same contract.

Global Development, Option and License Agreement and Strategic Collaboration Agreement

In October 2017, we entered into the Nestlé License Agreement with Nestlé Health Science and, solely for the purpose of the integration and the dispute resolution clauses of the Nestlé License Agreement, Nestlé Health Science S.A., to advance CDX-6114, our enzyme biotherapeutic product candidate for the potential treatment of PKU.

In January 2019, we received notice from the FDA that it had completed its review of our IND for CDX-6114 and concluded that we may proceed with the proposed Phase 1b multiple ascending dose study in healthy volunteers in the United States. In February 2019, Nestlé Health Science exercised its option to obtain an exclusive, worldwide, royalty-bearing, sub-licensable license for the global development and commercialization of CDX-6114 for the management of PKU. Upon exercising its option, Nestlé Health Science made an option payment and assumed all responsibilities for future clinical development and commercialization of CDX-6114. We are also eligible to receive payments from Nestlé Health Science under the Nestlé License Agreement that include (i) development and approval milestones of up to $85.0 million, (ii) sales-based milestones of up to $250.0 million in the aggregate, which aggregate amount is achievable if net sales exceed $1.0 billion in a single year, and (iii) tiered royalties, at percentages ranging from the mid-single digits to low double-digits, of net sales of product.

In October 2017, we entered into the Nestlé SCA pursuant to which we and Nestlé Health Science are collaborating to leverage the CodeEvolve® protein engineering technology platform to develop novel enzymes for Nestlé Health Science's established Consumer Care and Medical Nutrition business areas.

In January 2020, we entered into a development agreement with Nestlé Health Science pursuant to which we and Nestlé Health Science are collaborating to advance a lead candidate, CDX-7108, targeting a gastrointestinal disorder discovered through our Nestlé SCA into preclinical and early clinical studies. During 2021, we, together with Nestlé Health Science, continued to advance CDX-7108 towards initiation of a Phase 1 clinical trial which commenced in October 2021. Additionally, the parties are progressing three programs under the Nestlé SCA targeting different gastrointestinal disorders

Under the Nestlé SCA and the development agreement, we recognized research and development fees of $2.4 million and $5.8 million for the three and nine months ended September 30, 2021, respectively, compared to $2.8 million and $6.1 million for the three and nine months ended September 30, 2020, respectively.

Platform Technology Transfer and License Agreement

In May 2019, we entered into the Novartis CodeEvolver® Agreement with Novartis. The Agreement allows Novartis to use our proprietary CodeEvolver® protein engineering platform technology in the field of human healthcare. In July 2021, we announced the completion of the technology transfer period during which we transferred our proprietary CodeEvolver® protein engineering platform technology to Novartis (the "Technology Transfer Period"). As a part of this technology transfer, the Company provided to Novartis our proprietary enzymes, proprietary protein engineering protocols and methods, and proprietary software algorithms. In addition, teams of the Company and Novartis scientists participated in technology training sessions and collaborative research projects at our laboratories in Redwood City, California and at a designated Novartis laboratory in Basel, Switzerland. Novartis has now installed the CodeEvolver® protein engineering platform technology at its designated laboratory.

Pursuant to the agreement, we received an upfront payment of $5.0 million shortly after the effective date of the Novartis CodeEvolver® Agreement. In the second quarter of 2020, we completed the second technology milestone transfer under the agreement and became eligible to receive a milestone payment of $4.0 million, which we subsequently received in July 2020. We have also received $3.4 million in March 2021, for partial completion of the third technology milestone. Additionally, we will receive an additional payment of $1.6 million for completion of the third technology transfer milestone in July 2021, which brings the total cash payment for the third technology transfer milestone to $5.0 million as specified in the Novartis CodeEvolver® Agreement. In consideration for the continued disclosure and license of improvements to the technology and materials during a multi-year period that began on the conclusion of the Technology Transfer Period ("Improvements Term"), Novartis will pay Codexis annual payments which amount to an additional $8.0 million in aggregate. The Company also has the potential to receive quantity-dependent, usage payments for each API that is manufactured by Novartis using one or more enzymes that have been developed or are in development using the CodeEvolver® protein engineering platform technology during the period that began on the conclusion of the Technology Transfer Period and ends on the expiration date of the last to expire licensed patent. These product-related usage payments, if any, will be paid by Novartis to the Company for each quarter that Novartis manufactures API using a CodeEvolver®-developed enzyme. The usage payments will be based on the total volume of API produced using the CodeEvolver®-developed enzyme. These usage payments can begin in the clinical stage and will extend throughout the commercial life of each API. Revenue for the combined initial license and technology transfer performance obligation is being recognized using a single measure of progress that depicts our performance in transferring control of the services, which is based on the ratio of level of effort incurred to date compared to the total estimated level of effort required to complete the performance obligation relating to the combined initial license and technology transfer. In July 2021, we completed the technology transfer to Novartis. Revenue allocated to improvements made during the Improvements Term will be recognized during the Improvement Term. We recognized $0.2 million and $1.4 million in research and development revenue for the three and nine months ended September 30, 2021, respectively, compared to $0.9 million and $4.1 million for the three and nine months ended September 30, 2020, respectively.

Strategic Collaboration and License Agreement

In March 2020, we entered into the Takeda Agreement with Shire Human Genetic Therapies, Inc., a wholly-owned subsidiary of Takeda, under which we are collaborating to research and develop protein sequences for use in gene therapy products for certain diseases. On execution of the Takeda Agreement, we received an upfront non-refundable cash payment of $8.5 million. Revenue relating to the functional licenses provided to Takeda was recognized at a point in time when the control of the license transferred to the customer. In May 2021, Takeda elected to exercise its option to initiate an additional program for a certain undisclosed rare genetic disorder; as a result we received the option exercise fee during the third quarter of 2021.

Other potential payments from Takeda include (i) reimbursement of research and development fees and preclinical development milestones for the three initial programs of $15.4 million, in aggregate (ii) clinical development and commercialization-based milestones, per target gene, of up to $100.0 million, and (iii) tiered royalties based on net sales of applicable products at percentages ranging from the middle-single digits to low single-digits. We recognized research and development revenue related to the Takeda Agreement of $1.8 million and $6.0 million for the three and nine months ended September 30, 2021, respectively, compared to $2.6 million and $10.6 million for the three and nine months ended September 30, 2020, respectively.

Pfizer, Inc. purchase orders

In June 2021, we received a binding purchase order from Pfizer, Inc. for the sale and purchase of a quantity of proprietary enzyme product for $13.9 million. In August 2021, we had received two additional binding purchase orders from Pfizer for the sale and purchase of a quantity of the same enzyme product for an aggregate amount of approximately $15.0 million. The enzyme product is intended for use in the manufacture of Pfizer's clinical-stage COVID antiviral therapeutic candidate.

We recognized product revenue related to the three purchase orders from Pfizer of $18.9 million for the three and nine months ended September 30, 2021. As of September 30, 2021, we recorded revenue of $10.6 million from the sale of this enzyme productthat were recognized over time based on the progress of the manufacturing process. These products will be shipped within the three month period following the end of the quarter. As of September 30, 2021, we had $10.6 million in contract assets related to these purchase orders.

Results of Operations

The following table shows the amounts from our unaudited condensed consolidated statements of operations for the periods presented (in thousands, except percentages):

	Three months ended September 30,		Change		Nine months ended September 30,		Change	
	2021	2020	$	%	2021	2020	$	%
Revenues:								
Product revenue	$ 28,731	$ 8,401	$ 20,330	242 %	$ 53,674	$ 18,005	$ 35,669	198 %
Research and development revenue	8,038	9,984	(1,946)	(19) %	26,579	30,018	(3,439)	(11) %
Total revenues	36,769	18,385	18,384	100 %	80,253	48,023	32,230	67 %
Costs and operating expenses:								
Cost of product revenue	6,867	3,642	3,225	89 %	15,403	7,882	7,521	95 %
Research and development	15,165	12,010	3,155	26 %	39,562	33,830	5,732	17 %
Selling, general and administrative	13,407	8,797	4,610	52 %	37,600	26,307	11,293	43 %
Total costs and operating expenses	35,439	24,449	10,990	45 %	92,565	68,019	24,546	36 %
Income (loss) from operations	1,330	(6,064)	7,394	122 %	(12,312)	(19,996)	7,684	(38) %
Interest income	41	39	2	5 %	424	362	62	17 %
Other income (expense), net	983	(50)	1,033	2,066 %	920	(125)	1,045	836 %
Income (loss) before income taxes	2,354	(6,075)	8,429	139 %	(10,968)	(19,759)	8,791	(44) %
Provision for income taxes	110	19	91	479 %	121	331	(210)	(63) %
Net income (loss)	$ 2,244	$ (6,094)	$ 8,338	137 %	$ (11,089)	$ (20,090)	$ 9,001	(45) %

Revenues

Our revenues comprise of product revenue and research and development revenue as follows:

- Product revenue consist of sales of biocatalysts, pharmaceutical intermediates, and Codex® biocatalyst panels and kits.
- Research and development revenue includes license, technology access and exclusivity fees, research services fees, milestone payments, royalties, optimization and screening fees.

Revenues are as follows (in thousands, except percentages):

	Three months ended September 30,		Change		Nine months ended September 30,		Change	
	2021	2020	$	%	2021	2020	$	%
Product revenue	$ 28,731	$ 8,401	$ 20,330	242 %	$ 53,674	$ 18,005	$ 35,669	198 %
Research and development revenue	8,038	9,984	(1,946)	(19) %	26,579	30,018	(3,439)	(11) %
Total revenues	$ 36,769	$ 18,385	$ 18,384	100 %	$ 80,253	$ 48,023	$ 32,230	67 %

Revenues typically fluctuate on a quarterly basis due to the variability in our customers' manufacturing schedules and the timing of our customers' clinical trials. In addition, we have limited internal capacity to manufacture enzymes. As a result, we are dependent upon the performance and capacity of third-party manufacturers for the commercial scale manufacturing of the enzymes used in our pharmaceutical and fine chemicals business.

We accept purchase orders for deliveries covering periods from one day up to approximately 14 months from the date on which the order is placed. However, a majority of the purchase orders can be revised or cancelled by the customer without penalty. Considering these industry practices and our experience, we do not believe the total of customer purchase orders outstanding (backlog) provides meaningful information that can be relied on to predict actual sales for future periods.

Total revenues increased by $18.4 million and $32.2 million in the three and nine months ended September 30, 2021, respectively, compared to the same periods in 2020, primarily due to higher product revenue but partially offset by lower research and development revenue for the three and nine month period.

Product revenue, increased by $20.3 million and $35.7 million in the three and nine months ended September 30, 2021, respectively, compared to the same periods in 2020, primarily due to an increase in customer demand for branded pharmaceutical products. We expect the demand for our products for the rest of the year to be higher than the comparative periods in the prior year mainly due to overall higher demand for enzymes used in the manufacture of branded pharmaceutical products and a total of three large purchase orders from Pfizer, Inc. for an aggregate amount of $29.0 million of a proprietary high enzyme product that we received in June and August 2021 and that will continue to be recognized as revenue in subsequent periods.

Research and development revenue decreased by $1.9 million and $3.4 million in the three and nine months ended September 30, 2021, respectively, compared to the same periods in 2020, primarily due to lower license and research and development fees from Takeda under the Takeda Agreement and lower revenues from the Novartis CodeEvolver® Agreement recognized this year compared to the prior year period, partially offset by higher license fees from other existing collaboration agreements.

Cost and Operating Expenses

Our cost and operating expenses comprise cost of product revenue, research and development expense, and selling, general and administrative expense. The following table shows the amounts of our cost of product revenue, research and development expense, and selling, general and administrative expense from our unaudited condensed consolidated statements of operations for the periods presented (in thousands, except percentages):

	Three months ended September 30,		Change		Nine months ended September 30,		Change	
	2021	2020	$	%	2021	2020	$	%
Cost of product revenue	$ 6,867	$ 3,642	$ 3,225	89 %	$ 15,403	$ 7,882	$ 7,521	95 %
Research and development	15,165	12,010	3,155	26 %	39,562	33,830	5,732	17 %
Selling, general and administrative	13,407	8,797	4,610	52 %	37,600	26,307	11,293	43 %
Total costs and operating expenses	$ 35,439	$ 24,449	$ 10,990	45 %	$ 92,565	$ 68,019	$ 24,546	36 %

Cost of Product Revenue and Product Gross Margin

Our product revenues are derived entirely from our Performance Enzymes segment. Revenues from the Novel Biotherapeutics segment are from collaborative research and development activities and not from product revenue.

The following table shows the amounts of our product revenue, cost of product revenue, product gross profit and product gross margin from our unaudited condensed consolidated statements of operations for the periods presented (in thousands, except percentages):

	Three months ended September 30,		Change		Nine months ended September 30,		Change	
	2021	2020	$	%	2021	2020	$	%
Product revenue	$ 28,731	$ 8,401	$ 20,330	242 %	$ 53,674	$ 18,005	$ 35,669	198 %
Cost of product revenue [1]	6,867	3,642	3,225	89 %	15,403	7,882	7,521	95 %
Product gross profit	$ 21,864	$ 4,759	$ 17,105	359 %	$ 38,271	$ 10,123	$ 28,148	278 %
Product gross margin (%) [2]	76 %	57 %			71 %	56 %		

[1] Cost of product revenue comprises both internal and third-party fixed and variable costs, including materials and supplies, labor, facilities and other overhead costs associated with our product revenue.

[2] Product gross margin is used as a performance measure to provide additional information regarding our results of operations on a consolidated basis.

Cost of product revenue increased by $3.2 million in the three months ended September 30, 2021, compared to the three months ended September 30, 2020, and increased by $7.5 million in the nine months ended September 30, 2021, compared to the nine months ended September 30, 2020. The increase was primarily due to a higher volume of product sales and variations in product mix. The product gross margin increased to 76% and 71% in the three and nine months ended September 30, 2021, respectively, compared to 57% and 56% in the three and nine months ended September 30, 2020, respectively, primarily due to the sale of higher margin branded products.

Research and Development Expenses

Research and development expenses consist of costs incurred for internal projects as well as collaborative research and development activities. These costs primarily consist of (i) employee-related costs, which include salaries and other personnel-related expenses (including stock-based compensation), (ii) various allocable expenses, which include occupancy-related costs, supplies, depreciation of facilities and laboratory equipment, and (iii) external costs. Research and development expenses are expensed when incurred.

Research and development expenses increased by $3.2 million, or 26%, during the three months ended September 30, 2021, and by $5.7 million, or 17%, in the nine months ended September 30, 2021, compared to the same periods in 2020. The increase in research and development expenses was primarily due to an increase in costs associated with higher headcount, higher lab supplies, depreciation and other outside services, partially offset by a decrease in costs associated with outside services relating to CMC and regulatory expenses. We expect research and development expenses for the rest of the year to be higher than the comparative periods in the prior year mainly due to increase in headcount as we continue our efforts on advancing our internal and collaborative programs.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of employee-related costs, which include salaries and other personnel-related expenses (including stock-based compensation), hiring and training costs, consulting and outside services expenses (including audit and legal counsel related costs), marketing costs, building lease costs, and depreciation expenses and amortization expense.

Selling, general and administrative expenses increased by $4.6 million, or 52%, in the three months ended September 30, 2021, and by $11.3 million, or 43%, in the nine months ended September 30, 2021 compared to the same periods in 2020. The increase was primarily due to an increase in costs associated with a higher headcount, increase in legal fees, and higher share-based compensation costs, partially offset by lower travel and allocable expenses. We expect selling, general and administrative expenses for the rest of the year to be higher than the comparative periods in the prior year mainly due to increase in headcount and higher operating costs as we invest more in our business.

Interest Income and Other Income (Expense), net (in thousands, except percentages):

	Three months ended September 30,		Change		Nine months ended September 30,		Change	
	2021	2020	$	%	2021	2020	$	%
Interest income	$ 41	$ 39	2	5 %	$ 424	$ 362	62	17 %
Other income (expense), net	983	(50)	1,033	2,066 %	920	(125)	1,045	836 %
Total other income (expense), net	$ 1,024	$ (11)	$ 1,035	9,409%	$ 1,344	$ 237	$ 1,107	467 %

Interest Income

Interest income increased by $2 thousand and $62 thousand in the three and nine months ended September 30, 2021, respectively, compared to the same periods in 2020, primarily due to earned interest income and amortization of debt discount on a non-marketable debt security, partially offset by a reduction in interest income from lower average interest rates on lower average cash balances.

Other Income (Expense), net

Other income (expense), net, increased by $1.0 million in the three and nine months ended September 30, 2021 compared to the same periods in 2020 primarily due to gain from remeasurement on the carrying value of our investment in MAI, but partially offset by a prior year write-down of $0.4 million of our investment in CO_2 Solutions and fluctuations in foreign currency.

Provision for Income Taxes (in thousands, except percentages):

	Three months ended September 30,		Change		Nine months ended September 30,		Change	
	2021	2020	$	%	2021	2020	$	%
Provision for income taxes	$ 110	$ 19	$ 91	479 %	$ 121	$ 331	$ (210)	(63)%

The provision for income taxes for the three and nine months ended September 30, 2021 and 2020 were primarily due to the income tax withholding imposed by foreign taxing authorities on income earned in certain countries outside of the United States and remitted to the United States and the accrual of interest and penalties on historic uncertain tax positions.

Net Income (Loss)

Net income for the three months ended September 30, 2021 was $2.2 million, or $0.03 per basic and diluted share. This compared to a net loss of $6.1 million, or $0.10 per basic and diluted share for the three months ended September 30, 2020. Net loss for the nine months ended September 30, 2021 was $11.1 million, or $0.17 per basic and diluted share. This compared to a net loss of $20.1 million, or $0.34 per basic and diluted share for the nine months ended September 30, 2020. The achievement of net income in the three months ended September 30, 2021, and the decrease in net loss for the nine months ended September 30, 2021, was primarily related to an increase in product revenue with higher margins, partially offset by higher operating expenses and lower research and development revenues.

Results of Operations by Segment (in thousands, except percentages):

Revenues by segment

	Three months ended September 30,						Change			
	2021			2020			Performance Enzymes		Novel Biotherapeutics	
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total	$	%	$	%
Revenues:										
Product revenue	$ 28,731	$ —	$ 28,731	$ 8,401	$ —	$ 8,401	$ 20,330	242 %	$ —	— %
Research and development revenue	3,853	4,185	8,038	4,604	5,380	9,984	(751)	(16)%	(1,195)	(22)%
Total revenues	$ 32,584	$ 4,185	$ 36,769	$ 13,005	$ 5,380	$ 18,385	$ 19,579	151 %	$ (1,195)	(22)%

	Nine months ended September 30,						Change			
	2021			2020			Performance Enzymes		Novel Biotherapeutics	
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total	$	%	$	%
Revenues:										
Product revenue	$ 53,674	$ —	$ 53,674	$ 18,005	$ —	$ 18,005	$ 35,669	198 %	$ —	— %
Research and development revenue	14,723	11,856	26,579	13,380	16,638	30,018	1,343	10 %	(4,782)	(29)%
Total revenues	$ 68,397	$ 11,856	$ 80,253	$ 31,385	$ 16,638	$ 48,023	$ 37,012	118 %	$ (4,782)	(29)%

Revenues from the Performance Enzymes segment increased by $19.6 million, or 151%, for the three months ended September 30, 2021, and by $37.0 million, or 118%, for the nine months ended September 30, 2021, compared to the same periods in 2020, primarily due to higher product revenue. The increase in product revenue of $20.3 million, or 242%, in the three months ended September 30, 2021, and of $35.7 million, or 198%, in the nine months ended September 30, 2021, compared to the same periods in 2020, was primarily due to higher customer demand for enzymes for the manufacture of branded pharmaceuticals products.The decrease in research and development revenue of $0.8 million, or 16%, to $3.9 million in three months ended September 30, 2021, compared to $4.6 million in the three months ended September 30, 2020 was primarily due to lower revenue from the Novartis CodeEvolver® Agreement as we completed the technology transfer to Novartis during the third quarter of 2021. The increase in research and development revenue of $1.3 million, or 10%, to $14.7 million in the nine months ended September 30, 2021, compared to $13.4 million in the nine months ended September 30, 2020, was primarily due to higher license fees from existing collaboration agreements but partially offset by lower revenues from Novartis under the Novartis CodeEvolver® Agreement.

Revenues from the Novel Biotherapeutics segment decreased by $1.2 million, or 22%, for the three months ended September 30, 2021, and by $4.8 million, or 29%, for the nine months ended September 30, 2021, compared to the same

periods in 2020, primarily due to lower license and research and development fees from Takeda under the Takeda Agreement recognized this year compared to the prior year and a decrease in research and development revenue from Nestlé Health Science compared to last year.

Costs and operating expenses by segment

	Three months ended September 30,						Change			
	2021			2020			Performance Enzymes		Novel Biotherapeutics	
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total	$	%	$	%
Cost of product revenue	$ 6,867	$ —	$ 6,867	$ 3,642	$ —	$ 3,642	$ 3,225	89 %	$ —	— %
Research and development [1]	5,670	8,850	14,520	5,184	6,433	11,617	486	9 %	2,417	38 %
Selling, general and administrative [1]	3,306	831	4,137	2,675	515	3,190	631	24 %	316	61 %
Total segment costs and operating expenses	$ 15,843	$ 9,681	25,524	$ 11,501	$ 6,948	18,449	$ 4,342	38 %	$ 2,733	39 %
Corporate costs [2]			9,121			5,472				
Unallocated depreciation and amortization			794			528				
Total costs and operating expenses			$ 35,439			$ 24,449				

	Nine months ended September 30,						Change			
	2021			2020			Performance Enzymes		Novel Biotherapeutics	
	Performance Enzymes	Novel Biotherapeutics	Total	Performance Enzymes	Novel Biotherapeutics	Total	$	%	$	%
Cost of product revenue	$ 15,403	$ —	$ 15,403	$ 7,882	$ —	$ 7,882	$ 7,521	95 %	$ —	— %
Research and development [1]	17,172	20,649	37,821	15,877	16,848	32,725	1,295	8 %	3,801	23 %
Selling, general and administrative [1]	9,294	2,052	11,346	7,395	1,728	9,123	1,899	26 %	324	19 %
Total segment costs and operating expenses	$ 41,869	$ 22,701	64,570	$ 31,154	$ 18,576	49,730	$ 10,715	34 %	$ 4,125	22 %
Corporate costs [2]			25,775			16,763				
Unallocated depreciation and amortization			2,220			1,526				
Total costs and operating expenses			$ 92,565			$ 68,019				

[1] Research and development expenses and selling, general and administrative expenses exclude depreciation and amortization of finance leases.
[2] Corporate costs include unallocated selling, general and administrative expenses.

For a discussion of product cost of revenue, see "*Results of Operations*".

Research and development expense in the Performance Enzymes segment increased by $0.5 million, or 9%, in the three months ended September 30, 2021, and by $1.3 million, or 8% in the nine months ended September 30, 2021, as compared to the same periods in 2020. The increase was primarily due to an increase in costs associated with outside services, lab supplies and higher headcount, partially offset by lower allocable expenses.

Selling, general and administrative expense in the Performance Enzymes segment increased by $0.6 million, or 24%, in the three months ended September 30, 2021, and by $1.9 million, or 26%, in the nine months ended September 30, 2021, as compared to the same periods in 2020. The increase was primarily due to an increase in costs associated with higher headcount and higher allocable expenses, partially offset by lower outside services expenses.

Research and development expense in the Novel Biotherapeutics segment increased by $2.4 million, or 38%, in the three months ended September 30, 2021, and by $3.8 million, or 23%, in the nine months ended September 30, 2021, as compared to the same periods in 2020. The increase was primarily due to higher costs associated with higher headcount and allocable expenses but partially offset by reduction in costs associated with outside services relating to CMC and regulatory expenses.

Selling, general and administrative expense in the Novel Biotherapeutics segment increased by $0.3 million, or 61%, in the three months ended September 30, 2021, and by $0.3 million, or 19%, in the nine months ended September 30, 2021, as compared to the same periods in 2020. The increase was primarily due to increase in costs associated with higher headcount and higher allocable expenses, partially offset by lower outside services expenses.

Liquidity and Capital Resources

Liquidity is the measurement of our ability to meet working capital needs and to fund capital expenditures. We have historically funded our operations primarily through cash generated from operations, stock option exercises and public and private offerings of our common stock. We also have the ability to borrow up to $15.0 million under our Credit Facility. We actively manage our cash usage and investment of liquid cash to ensure the maintenance of sufficient funds to meet our working capital needs. Our cash and cash equivalents are held in U.S. banks.

The following summarizes our cash and cash equivalents balance and working capital as of September 30, 2021 and December 31, 2020 (in thousands):

	September 30, 2021	December 31, 2020
Cash and cash equivalents	$ 119,189	$ 149,117
Working capital	$ 140,632	$ 159,442

In addition to our existing cash and cash equivalents, we are eligible to earn milestone and other contingent payments for the achievement of defined collaboration objectives and certain royalty payments under our collaboration agreements. Our ability to earn these milestone and contingent payments and the timing of achieving these milestones is primarily dependent upon the outcome of our collaborators' research and development activities and is uncertain at this time. In 2016, we completed the final phase in the transfer of CodeEvolver® technology to Merck under the Merck CodeEvolver® Agreement. We are eligible to receive payments of up to $15.0 million for each commercial API that is manufactured by Merck using one or more novel enzymes developed by Merck using the CodeEvolver® technology. In addition, depending upon GSK's successful application of the licensed technology, we have the potential to receive additional contingent payments that range from $5.75 million to $38.5 million per project.

In May 2019, we entered into the Novartis CodeEvolver® Agreement with Novartis. The Novartis CodeEvolver® Agreement allows Novartis to use Codexis' proprietary CodeEvolver® protein engineering platform technology in the field of human healthcare. Pursuant to the agreement, we received an upfront payment of $5.0 million shortly after the effective date of the Novartis CodeEvolver® Agreement. In the second quarter of 2020, we completed the second technology milestone transfer under the agreement and became eligible to receive a milestone payment of $4.0 million, which we subsequently received in July 2020. In the first quarter of 2021, we also received$3.4 million for partial completion of the third technology milestone. Additionally, we will receive an additional $1.6 million for the completion of the third technology transfer milestone in July 2021. In consideration for the continued disclosure and license of improvements to our technology and materials during a multi-year period that begins on the conclusion of the Technology Transfer Period ("Improvements Term"), Novartis will pay Codexis annual payments which amount to an additional $8 million in aggregate.

In October 2017, we entered into the Nestlé License Agreement with Nestlé Health Science. Pursuant to the Nestlé License Agreement, Nestlé Health Science paid us an upfront cash payment and milestone payments after dosing the first subjects in a first-in-human Phase 1a dose-escalation trial with CDX-6114 and achievement of a formulation relating to CDX-6114. In January 2019, we received notice from the FDA that it had completed its review of our IND for CDX-6114 and concluded that we may proceed with the proposed Phase 1b multiple ascending dose study in healthy volunteers in the United States. In February 2019, Nestlé Health Science exercised its option to obtain an exclusive, worldwide, royalty-bearing, sub-licensable license for the global development and commercialization of CDX-6114 for the management of PKU. Upon exercising its option, Nestlé Health Science made an option payment and assumed all responsibilities for future clinical development and commercialization of CDX-6114, with the exception of the completion of an extension study which was substantially completed in the fourth quarter of 2019. Other potential payments from Nestlé Health Science to us under the Nestlé License Agreement include (i) development and approval milestones of up to $85.0 million, (ii) sales-based milestones of up to $250.0 million in the aggregate, which aggregate amount is achievable if net sales exceed $1.0 billion in a single year, and (iii) tiered royalties, at percentages ranging from the mid-single digits to low double-digits, of net sales of products containing CDX-6114.

We are actively collaborating with new and existing customers in the pharmaceutical and food industries. We believe that we can utilize our current products and services, and develop new products and services, to increase our revenues and gross margins in future periods.

We have historically experienced negative cash flows from operations as we continue to invest in key technology development projects and improvements to our CodeEvolver® protein engineering technology platform and expand our business development and collaboration with new customers. Our cash flows from operations will continue to be affected principally by product sales and product gross margins, sales from licensing our technology to major pharmaceutical companies, and collaborative research and development services provided to customers, as well as our headcount costs, primarily in research and development. Our primary source of cash flows from operating activities is cash receipts from our customers for purchases of products, collaborative research and development services, and licensing our technology to major pharmaceutical companies. Our largest uses of cash from operating activities are for employee-related expenditures, rent payments, inventory purchases to support our product sales and non-payroll research and development costs.

Equity Distribution Agreement

In May 2021, we entered into an Equity Distribution Agreement ("EDA") with Piper Sandler & Co ("PSC"), under which PSC, as our exclusive agent, at our discretion and at such times that we may determine from time to time, may sell over a three-year period from the execution of the agreement up to a maximum of $50 million of shares of our common stock. During the nine months ended September 30, 2021, no shares were issued of our common stock pursuant to the EDA. As of September 30, 2021, $50.0 million of shares remained available for sale under the EDA. Sales of our common stock under this arrangement could be subject to business, economic or competitive uncertainties and contingencies, many of which may be beyond our control, and which could cause actual results from the sale of our common stock to differ materially from expectations. For information, see Note 9, "Capital Stock" in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q.

Stock Offering

In December 2020, we completed an underwritten public offering of 4,928,572 shares of our common stock, par value $0.0001 per share, at a public offering price of $17.50 per share. The net proceeds to us were approximately $80.8 million after deducting offering costs and the underwriting discounts and commissions and other offering expenses of $5.5 million.

Credit Facility

In June 30, 2017, we entered into the Credit Facility with Western Alliance Bank which consists of term debt for loans that allow us to borrow up to $10.0 million, and under a revolving facility that allows us to borrow up to $5.0 million with a certain eligible accounts receivable borrowing base of 80% of eligible accounts receivable. In September 2021, we entered into the Ninth Amendment to the Credit Facility whereby we may draw on the Term Debt and the Revolving Line of Credit at any time prior to December 31, 2021 and October 1, 2024, respectively, subject to customary conditions for funding including, among others, that no event of default exists. Draws on the Credit Facility are secured by a lien on substantially all of our personal property other than our intellectual property. On October 1, 2024, loans drawn under the Term Debt mature and the Revolving Line of Credit terminates. There were no amounts drawn under the credit facility as of September 30, 2021 and December 31, 2020. At September 30, 2021, we were in compliance with the covenants for the Credit Facility. The Credit Facility requires us to maintain compliance with certain financial covenants including attainment of certain lender-approved projections or maintenance of certain minimum cash levels. Restrictive covenants in the Credit Facility restrict the payment of dividends or other distributions. For additional information about our contractual obligations, see Note 10, "Commitments and Contingencies" in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q.

As of September 30, 2021, we had cash and cash equivalents of $119.2 million and $15.0 million available to borrow under our Credit Facility. Our liquidity is dependent upon our cash and cash equivalents, cash flows provided by operating activities and the continued availability of borrowings under our Credit Facility.

We believe that, based on our current level of operations, our existing cash and cash equivalents will provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next 12 months.

However, we may need additional capital if our current plans and assumptions change. In addition, we may choose to seek other sources of capital even if we believe we have generated sufficient cash flows to support our operating needs. Our need for additional capital will depend on many factors, including the financial success of our business, the spending required to develop and commercialize new and existing products, the effect of any acquisitions of other businesses, technologies or facilities that

we may make or develop in the future, our spending on new market opportunities, and the potential costs for the filing, prosecution, enforcement and defense of patent claims, if necessary. If our capital resources are insufficient to meet our capital requirements, and we are unable to enter into or maintain collaborations with partners that are able or willing to fund our development efforts or commercialize any products that we develop or enable, we will have to raise additional funds to continue the development of our technology and products and complete the commercialization of products, if any, resulting from our technologies. If future financings involve the issuance of equity securities, our existing stockholders would suffer dilution. If we raise debt financing or enter into credit facilities, we may be subject to restrictive covenants that limit our ability to conduct our business. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and fail to generate sufficient revenues to achieve planned gross margins and to control operating costs, our ability to fund our operations, take advantage of strategic opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research or development programs or the commercialization of products resulting from our technologies, curtail or cease operations or obtain funds through collaborative and licensing arrangements that may require us to relinquish commercial rights, or grant licenses on terms that are not favorable to us. If adequate funds are not available, we will not be able to successfully execute our business plan or continue our business.

Cash Flows

The following is a summary of cash flows for nine months ended September 30, 2021 and 2020 (in thousands):

	Nine months ended September 30,	
	2021	**2020**
Net cash used in operating activities	$ (14,927)	$ (14,972)
Net cash used in investing activities	(15,942)	(3,260)
Net cash provided by (used in) financing activities	1,341	(778)
Net decrease in cash, cash equivalents and restricted cash	$ (29,528)	$ (19,010)

Cash Flows from Operating Activities

Cash used in operating activities was $14.9 million for the nine months ended September 30, 2021, which resulted from a net loss of $11.1 million adjusted for non-cash charges for depreciation of $2.1 million, ROU lease asset amortization expense of $2.0 million, stock-based compensation of $8.5 million, partially offset by equity securities earned from research and development activities of $0.7 million and unrealized gain on non-marketable securities of $1.0 million. Additional cash used by changes in operating assets and liabilities was $14.8 million. Changes in operating assets and liabilities included a decrease of $2.3 million in other long-term liabilities, increase of $19.6 million in financial assets and increase of $1.2 million in prepaid expenses and other assets, partially offset by increase of $7.0 million in accrued compensation and other accrued liabilities, increase of $0.9 million in deferred revenue and increase of $0.6 million in accounts payable.

Cash used in operating activities was $15.0 million for the nine months ended September 30, 2020, which resulted from a net loss of $20.1 million adjusted for non-cash charges for depreciation of $1.4 million, ROU lease asset amortization expense of $2.0 million, stock-based compensation of $6.1 million and allowance of credit loss of $40 thousand. Additional cash used by changes in operating assets and liabilities was $4.3 million. Changes in operating assets and liabilities included an increase of $4.9 million in unbilled receivables, an increase of $1.6 million in accounts receivables, and a decrease of $1.9 million in other long-term liabilities partially offset by an increase of $3.6 million in accrued compensation and other accrued liabilities and an increase of $2.0 million in deferred revenue.

Cash Flows from Investing Activities

Cash used in investing activities was $15.9 million and $3.3 million for the nine months ended September 30, 2021 and 2020, respectively. Cash used in investing activities for the nine months ended September 30, 2021 was primarily attributable to $8.3 million for purchases of property and equipment and $7.6 million for the purchase of 1,000,000 shares of MAI's Series A preferred stock in April 2021 and 9,198,423 shares of MAI's Series B preferred stock in September 2021.

Cash used in investing activities of $3.3 million for the nine months ended September 30, 2020, was primarily attributable to $2.3 million for purchases of property and equipment and $1.0 million for the purchase of 1,587,050 shares of MAI's Series A preferred stock.

Cash Flows from Financing Activities

Cash provided by financing activities was $1.3 million for the nine months ended September 30, 2021primarily attributable to $2.7 million of proceeds from exercises of stock options, partially offset by $1.2 million for taxes paid related to net share settlement of equity awards.

Cash used in financing activities was $0.8 million for the nine months ended September 30, 2020, which included $1.3 million for taxes paid related to net share settlement of equity awards offset by $0.5 million of proceeds from exercises of stock options.

Material Cash Requirements

The following table summarizes material cash requirements related to minimum future payments under non-cancellable operating leases, exclusive of common area maintenance charges and real estate taxes, as of September 30, 2021 (in thousands):

	Payments due by period				
	Total	Less than 1 year	1 to 3 years	4 to 5 years	More than 5 years
Operating lease [1]	$ 28,146	$ 4,220	$ 9,247	$ 9,810	$ 4,869
Operating lease [2]	31,723	1,726	6,015	7,974	16,008
Total	$ 59,869	$ 5,946	$ 15,262	$ 17,784	$ 20,877

[1] In the first quarter of 2019, we have entered into an Eighth Amendment to the Lease with MetLife, extending the lease terms from May 2027 to May 2029 of our Redwood City, California facilities.

[2] In the first quarter of 2021, we entered into a ten-year lease with ARE-San Francisco No. 63, LLC, for our San Carlos facilities.

For additional information see Note 10, “Commitments and Contingencies” in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q.

Other Material Cash Requirements

We have other material cash requirements related to supply and service arrangements entered in the normal course of business. For additional information about other material cash requirements, see Note 10, "Commitments and Contingencies" in the Notes to Unaudited Condensed Consolidated Financial Statements included in this Quarterly Report on Form 10-Q. Future minimum payments reflect amounts those obligations are expected to have on our liquidity and cash flows in future period and include obligations subject to risk of cancellation by us (in thousands):

Other Material Cash Requirements by Agreement Type	Agreement Date	Future Minimum Payment
Manufacture and supply agreement with expected future payment date of December 2022	April 2016	$ 147
Development and manufacturing services agreements	September 2019	686
Total other commitments		$ 833

We are contingently committed to an aggregate $2.7 million of potential future research and development milestone payments to third parties for patents, licensing and development programs achieved in clinical application and the regulatory approval process. Payments generally are due and payable only upon achievement of certain developmental and regulatory milestones for which the specific timing cannot be predicted. Certain agreements also provide for sales-based milestones aggregating to $0.6 million that we are contingently obligated to pay to upon achievement of certain sales levels in addition to royalties.

We do not utilize special-purpose financing vehicles or have undisclosed off-balance sheet arrangements.

Critical Accounting Policies and Estimates

The preparation financial statements in conformity with generally accepted accounting principles requires management to make judgments, estimates and assumptions in the preparation of our consolidated financial statements and accompanying notes. Actual results could differ from those estimates. There have been no material changes to our critical accounting policies or estimates during the three and nine months ended September 30, 2021, from those discussed in our Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on March 1, 2021.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk Management

Our cash flows and earnings are subject to fluctuations due to changes in foreign currency exchange rates, interest rates and other factors. These market risk exposures are disclosed in Part II, Item 7A of our Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on March 1, 2021.

Interest Rate Sensitivity

Our unrestricted cash and cash equivalents total $119.2 million at September 30, 2021. We primarily invest these amounts in money market funds which are held for working capital purposes. We do not enter into investments for trading or speculative purposes. As of September 30, 2021, the effect of a hypothetical 10% decrease in market interest rates would have an immaterial impact on a potential loss in future interest income and cash flows.

In June 2017, we entered into a Credit Facility with Western Alliance Bank consisting of term loans up to $10.0 million, and advances under a revolving line of credit up to $5.0 million. Term loans made under the Term Debt bear interest at variable rate through maturity at the greater of (i) 3.75% or (ii) the sum of (A) Index Rate (prime rate published in the Money Rates section of the Western Edition of The Wall Street Journal plus (B) 0.50%. Advances made under the Revolving Line of Credit bear interest at a variable annual rate equal to the greater of (i) 4.25% or (ii) the sum of (A) the prime rate plus (B) 1.00%. Increases in these variable interest rates will increase our future interest expense and decrease our results of operations and cash flows. No amounts were drawn under the Credit Facility as of September 30, 2021. Our exposure to interest rates risk relates to our 2017 Credit Facility with variable interest rates, where an increase in interest rates may result in higher borrowing costs. Since we have no outstanding borrowings under our 2017 Credit Facility as of September 30, 2021, the effect of a hypothetical 10% change in interest rates would not have any impact on our interest expense.

Foreign Currency Risk

Our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. Although substantially all of our sales are denominated in United States dollars, future fluctuations in the value of the USD may affect the price competitiveness of our products outside the United States. The impact of changes in foreign currency exchange rates on our operations and cash flows may be difficult or impossible to quantify.

Investment in Non-Marketable Equity Securities

We own investments in non-marketable equity securities without readily determinable fair values. We may value these equity securities based on significant recent arms-length equity transactions with sophisticated non-strategic unrelated investors, providing the terms of these security transactions are substantially similar to the security transactions terms between the investors and us. The impact of the difference in transaction terms on the market value of the portfolio company may be difficult or impossible to quantify.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures and internal controls that are designed to provide reasonable assurance that information required to be disclosed in our Exchange Act reports 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 our principal financial and accounting officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management, including our principal executive officer and our principal financial and accounting officer, evaluated the effectiveness of our disclosure controls and procedures as defined by Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Based on this review, our principal executive officer and our principal financial and accounting officer concluded that these disclosure controls and procedures were effective as of September 30, 2021, at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that occurred during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. There were no significant changes to our internal control over financial reporting due to the adoption of new standards.

Inherent Limitations on Effectiveness of Controls

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, even if determined effective and no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives to prevent or detect misstatements. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not currently a party to any material pending litigation or other material legal proceedings.

ITEM 1A. RISK FACTORS

We have included in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2020, a description of certain risks and uncertainties that could affect our business, future performance or financial condition (the "Risk Factors"). Other than in respect of the additional risk factor included below, during the three months ended September 30, 2021, there were no material changes from the disclosure provided in the Form 10-K for the year ended December 31, 2020 with respect to the Risk Factors. Investors should consider the Risk Factors, as well as the risk factor included below, prior to making an investment decision with respect to our stock.

A significant portion of our revenue growth in 2021 is as a result of purchase orders from Pfizer for use in the manufacture of its clinical-stage COVID antiviral therapeutic candidate, PF-07321332. If Pfizer discontinues the development of PF-07321332, our revenue will be materially and adversely affected.

In June and August 2021, we announced that we had received purchase orders of $13.9 million and approximately $15.0 million, respectively, from an undisclosed global pharmaceutical company for the sale and purchase of a proprietary Codexis enzyme product that is intended for use in the manufacture of a critical intermediate for its undisclosed active pharmaceutical ingredient in a therapeutic drug. In October 2021, we announced that these purchase orders, which aggregate to approximately $29 million, were received by us from Pfizer, Inc. and that the proprietary Codexis enzyme product is intended for use in the manufacture of PF-07321332, Pfizer's clinical-stage COVID antiviral therapeutic candidate.

In the event that Pfizer discontinues the development of PF-07321332 and, as a result, no longer requires the use of our enzyme to manufacture PF-07321332, our revenue will be materially and adversely affected. We have no control over the development of PF-07321332 and no additional insight into the development of PF-07321332 other than that publicly reported by Pfizer, including the results of any preclinical studies or clinical trials or the timing of announcements related to such studies or trials. If Pfizer decides to discontinue the development of PF-07321332 for the prevention of COVID-19 infection or if Pfizer otherwise determines that the clinical or commercial profile of PF-07321332 doesn't sufficiently warrant continued development, our future revenues may be materially and adversely impacted.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

ITEM 6. EXHIBITS

3.1		Amended and Restated Certificate of Incorporation of Codexis, Inc. filed with the Secretary of the State of the State of Delaware on April 27, 2010 and effective as of April 27, 2010 (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed on May 28, 2010).
3.2		Certificate of Designations of Series A Junior Participating Preferred Stock of Codexis, Inc., filed with the Secretary of State of the State of Delaware on September 4, 2012 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed on September 4, 2012).
3.3		Amended and Restated Bylaws of Codexis, Inc. effective as of April 27, 2010 (incorporated by reference to Exhibit 3.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed on May 28, 2010).
4.1		Reference is made to Exhibits 3.1 through 3.3.
10.1	*	Amendment No. 5 to Sitagliptin Supply Agreement, effective as of July 1, 2021, by and between Codexis, Inc. and Merck Sharp & Dohme Corp.
10.2		Ninth Amendment to Loan and Security Agreement, effective as of September 30, 2021, by and between Codexis, Inc. and Western Alliance Bank.
31.1		Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2		Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1		Certification of Principal Executive Officer and Principal Financial Officer Required Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. §1350.
101		The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, formatted in Inline Extensible Business Reporting Language ("iXBRL") includes: (i) Unaudited Condensed Consolidated Balance Sheets at September 30, 2021 and December 31, 2020 (ii) Unaudited Condensed Consolidated Statements of Operations for the Three and Nine Months Ended September 30, 2021 and 2020, (iii) Unaudited Condensed Consolidated Statements of Stockholders' Equity for the Three and Nine Months Ended September 30, 2021 and 2020, (iv) Unaudited Condensed Consolidated Statements of Cash Flows for the Nine Months Ended September 30, 2021 and 2020 and (v) Notes to Unaudited Condensed Consolidated Financial Statements.
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		The cover page from the Company’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, formatted in Inline XBRL and contained in Exhibit 101.

* Portions of the exhibit, marked by brackets, have been omitted because the omitted information is (i) not material and (ii) would be competitively harmful if publicly disclosed.

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.

Codexis, Inc.

Date: November 5, 2021

By: /s/ John J. Nicols

John J. Nicols
President and Chief Executive Officer
(principal executive officer)

Date: November 5, 2021

By: /s/ Ross Taylor

Ross Taylor
Senior Vice President and Chief Financial Officer
(principal financial and accounting officer)

[***] Certain information in this document has been excluded pursuant to Regulation S-K, Item 601(b)(10). Such excluded information is not material and would likely cause competitive harm to the registrant if publicly disclosed

Exhibit 10.1

AMENDMENT NO. 5 TO SITAGLIPTIN SUPPLY AGREEMENT

AMENDMENT NO. 5 TO SITAGLIPTIN CATALYST SUPPLY AGREEMENT (this "AMENDMENT") is effective as of **July 1, 2021 (the "AMENDMENT EFFECTIVE DATE")** by and between Codexis, Inc., a Delaware corporation, having a place of business at 200 Penobscot Drive, Redwood City, CA 94063 ("CODEXIS") and Merck Sharp and Dohme Corp., having a place of business at One Merck Drive, Whitehouse Station, NJ 08889-0100. ("MERCK")

W I T N E S S E T H:

WHEREAS, the parties are party to that certain **SITAGLIPTIN CATALYST SUPPLY AGREEMENT** dated as of February 1, 2012, as amended as of October 1, 2013, February 25, 2015, December 4, 2015 and as of January 1, 2016 (as so amended, the "AGREEMENT"); and

WHEREAS, the parties desire to amend the AGREEMENT to modify the terms of the AGREEMENT as more fully set forth below;

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein contained, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

1. As of the AMENDMENT EFFECTIVE DATE, the AGREEMENT is amended as follows:

1.01 Section 2.1.2 shall be amended to read in its entirety as follows:

During the TERM of this AGREEMENT, CODEXIS shall be the supplier of a minimum of [***]% of the SUBSTANCE requirements by MERCK; provided, however, there are no supply disruptions or compliance issues with the CODEXIS supplied SUBSTANCE pursuant to this Section 2.1.2. In the event MERCK or CODEXIS identifies a SUBSTANCE compliance issue with respect to the quality of SUBSTANCE or if CODEXIS is unable to supply, or anticipates it will be unable to supply, in whole or in part, the quantity of SUBSTANCE to MERCK as set forth in any purchase order or forecast, the identifying PARTY shall notify the other PARTY immediately of such issue, and the PARTIES shall discuss such issue in good faith. If the PARTIES mutually agree that such issue creates a significant risk with respect to quality and/or DELIVERY of SUBSTANCE, the PARTIES shall discuss in good faith steps to be taken to resolve such issue and CODEXIS shall have thirty (30) days to resolve such issue. If CODEXIS is unable to resolve such issue within such thirty (30)-day period, then MERCK shall have the right to immediately qualify its own SUBSTANCE MANUFACTURER and/or purchase from its own direct SUBSTANCE MANUFACTURER any quantity sufficient to alleviate the shortage and CODEXIS will have the obligation to immediately provide the appropriate technical support for such qualification at no cost to MERCK. In this case, the [***]% minimum SUBSTANCE supply commitment to CODEXIS by MERCK will immediately cease to be in effect until CODEXIS resolves such SUBSTANCE compliance issue to MERCK's reasonable satisfaction, at which point, such [***]% minimum requirement shall be reinstated at a reasonable time as MERCK may have made commitments to other suppliers to mitigate the risk. CODEXIS also hereby agrees and acknowledges that in the event of a shortage of SUBSTANCE, all available quantities of SUBSTANCE shall be allocated for DELIVERY to MERCK and shall be used solely to satisfy CODEXIS' obligations to MERCK hereunder prior to satisfying CODEXIS' obligations to any other customer besides MERCK.

1.02 Section 2.1.3 shall be amended to read in its entirety as follows:

"Beginning on February 1, 2022, MERCK, its AFFILIATES, and its THIRD PARTY SUPPLIER have the right to purchase up to and including [***]% of SUBSTANCE demand directly from a direct SUBSTANCE MANUFACTURER. The direct SUBSTANCE MANUFACTURER will be [***], which is also the SECONDARY SUBSTANCE MANUFACTURER for CODEXIS.

MERCK will negotiate the price for such SUBSTANCE directly with [***] and CODEXIS will not be involved in any part of the commercial agreement.

Within ninety (90) days after delivery of SUBSTANCE by [***] (as MERCK's, its AFFILIATES', and its THIRD PARTY SUPPLIERS' direct SUBSTANCE MANUFACTURER) to MERCK (or its AFFILIATE(S) or THIRD PARTY SUPPLIER(S)) as a SUBSTANCE MANUFACTURER, MERCK shall pay CODEXIS $[***]. Notwithstanding the foregoing, if MERCK's, its AFFILIATES', or its THIRD PARTY SUPPLIERS' direct purchases from a SUBSTANCE MANUFACTURER are necessitated as the result of a supply issue as described in Section 2.1.2, CODEXIS waives its right to this $[***] payment.

In the event that during any calendar year (N) MERCK's, its AFFILIATES', and its THIRD PARTY SUPPLIERS' purchases from direct SUBSTANCE MANUFACTURER exceeds [***]% of MERCK's SUBSTANCE demand in calendar year (N), thereby resulting in a CODEXIS share of less than [***]% for calendar year (N), then MERCK shall make up such deficit of purchases from CODEXIS in the following calendar year (N+1). Such make-up volume shall be in addition to the minimum of [***]% of SUBSTANCE demand MERCK, its AFFILIATES, and its THIRD PARTY SUPPLIERS are required to purchase from CODEXIS in calendar year (N+1). Make-up volume to be purchased in calendar year (N+1) will be priced according to the CUMULATIVE SUBSTANCE PURCHASE VOLUME TIER applicable on December 31 of calendar year (N).

For purposes of facilitating MERCK's, its AFFILIATES', and its THIRD PARTY SUPPLIERS' acquisition of SUBSTANCE from [***], beginning February 1, 2022 CODEXIS will, upon request by MERCK, perform the following services ("ANCILLARY SERVICES") for MERCK for each lot of SUBSTANCE purchased by MERCK, its AFFILIATES or its THIRD PARTY SUPPLIERS from [***] as contemplated by this Section 2.1.3:

1. Testing for Certificate of Analysis pursuant to the latest Quality Standard Specifications in effect per Section 6.1 and as provided for under Attachment 5 of the Agreement:
    a. Color, Form and Appearance
    b. Conversion/Specificity (@ 24 Hours)
    c. LOD
    d. Assay (Weight %)
    e. Molecular Weight
    f. SDS-PAGE - Identity
    g. Use Test (@16 Hours)
2. QC analytical data review
3. QA review of QC data sheet
4. Processing of BSE/TSE and COA
5. Product release

MERCK shall pay to CODEXIS a fee of US$[***] for ANCILLARY SERVICES performed by CODEXIS for each lot of SUBSTANCE purchased by MERCK, its AFFILIATES or its THIRD PARTY SUPPLIERS from [***]. CODEXIS will invoice MERCK upon completion of the ANCILLARY SERVICES for each lot of SUBSTANCE. MERCK shall pay complete invoices in the same manner as set forth in Sections 9.1 and 9.2 of the Agreement. CODEXIS shall make available to MERCK during quality audits of CODEXIS all documentation generated by CODEXIS in the regular course of performing the ANCILLARY SERVICES. CODEXIS warrants that it shall perform such ANCILLARY SERVICES for MERCK in good faith and in the same manner and with the same level of care as CODEXIS performs such services for itself with respect to SUBSTANCE produced by [***] for CODEXIS. Except as provided in the preceding sentence, ANCILLARY SERVICES are provided "as-is, where-is," and CODEXIS makes no warranty of any kind, express or implied, with respect to the ANCILLARY SERVICES including, without limitation, no warranties of merchantability, fitness for any particular purpose or conformance with industry standards. CODEXIS shall not discriminate against MERCK in the performance or timing of the ANCILLARY SERVICES as compared to its performance of similar services for CODEXIS' own business, and CODEXIS shall not be required to discriminate against its own businesses in the performance of the ANCILLARY SERVICES for MERCK. All risk and liability associated with the use of any ANCILLARY SERVICES by MERCK, its AFFILIATES, its and their THIRD PARTY SUPPLIERS, and/or [***], and the use of any SUBSTANCE produced by [***] which is purchased by MERCK, its AFFILIATES and their THIRD PARTY SUPPLIERS from [***], is the sole responsibility of MERCK."

1.03 Section 2.2.1.1 shall be amended to read in its entirety as follows:

"Within five (5) business days at the beginning of each QUARTER during the TERM, MERCK shall provide CODEXIS in writing (e-mail is acceptable) a good faith forecast reflecting MERCK's, its AFFILIATES', and its THIRD PARTY SUPPLIERS' requirements, if any, for SUBSTANCE for each of the following six (6) QUARTERS, including the QUARTER in which the forecast is delivered, by setting forth the quantities of SUBSTANCE to be supplied, broken down by QUARTER. All projected order dates, quantities and shipping dates set forth in the forecasts delivered pursuant to this Section 2.2.1.1 shall be binding on MERCK in respect of the requirements set forth for the next three (3) QUARTERS of the forecast, including the QUARTER in which the forecast is made. Additionally, for the third QUARTER of the binding forecast, during the ensuing QUARTER and up until the next QUARTER's forecast, MERCK reserves the right to adjust the quantities forecasted for the third QUARTER of the binding forecast by up to and including ±[***] % without penalty. For example only, the January 5th forecast in any calendar year shall include binding forecasts for the QUARTERS commencing January 1, April 1,

and July 1 in such calendar year and the binding forecast for the QUARTER commencing July 1 may be adjusted by ±[***] % without penalty between January 5th and April 5th. Except as provided in this Section 2.2.1.1, it is understood and agreed that the forecasts shall not constitute commitments to take DELIVERY of SUBSTANCE or FIRM ORDERS unless such forecasts are specified in writing by MERCK as binding."

1.04 Section 2.2.1.6 shall be amended to read in its entirety as follows:

"CODEXIS shall cause each shipment of SUBSTANCE to be DELIVERED to MERCK with not less than [***] months of the then-current re-test period remaining on such shipment of SUBSTANCE; provided, however, that after the re-test period of SUBSTANCE is extended to [***] months or beyond, CODEXIS shall cause each shipment of SUBSTANCE to be DELIVERED to MERCK with not less than [***] months of the then-current re-test period remaining on such shipment of SUBSTANCE. CODEXIS will perform stability tests through at least [***] months."

1.05 Section 4.1.2.2 shall be amended to read in its entirety as follows:

"Subject to Section 9.1, MERCK shall pay CODEXIS a SUBSTANCE FEE for the purchase of SUBSTANCE according to the schedule in ATTACHMENT 3 (Revised July 1, 2021). The pricing set forth in ATTACHMENT 3 (Revised July 1, 2021) will apply through the remaining TERM of this AGREEMENT based on the current ≥[***] % SUBSTANCE LOADING FACTOR. The PARTIES agree to negotiate a new pricing table should MERCK reduce the current ≥[***] % SUBSTANCE LOADING FACTOR.

The PARTIES agree that such ATTACHMENT 3 (Revised July 1, 2021) shall apply equally to all FIRM ORDERS placed by MERCK, its AFFILIATES and its THIRD PARTY SUPPLIERS directly with CODEXIS for DELIVERY of SUBSTANCE under this Agreement."

1.06 Section 11.2 shall be amended to read in its entirety as follows:

"MERCK shall protect, defend, indemnify, and hold CODEXIS, its AFFILIATES and their respective REPRESENTATIVES, harmless from any and all LOSSES to the extent such LOSSES arise out of or result from: (i) any breach by MERCK and/or its AFFILIATES of their representations, warranties, covenants or obligations under this AGREEMENT; (ii) any negligence, recklessness, or willful misconduct by MERCK and/or its AFFILIATES; (iii) product liability related to the marketing, sale or use of any COMPOUND or PRODUCT, or (iv) the use by MERCK and/or its AFFILIATES and/or their THIRD PARTY SUPPLIERS of any ANCILLARY SERVICES provided by CODEXIS to such parties and/or [***] pursuant to Section 2.3. The indemnification obligations for items (i), (ii) and (iii) above shall not apply to the extent CODEXIS is required to indemnify MERCK and its REPRESENTATIVES in accordance with Section 11.1, and the indemnification obligations for item (iv) above shall not apply to the extent of CODEXIS' or its REPRESENTATIVES' gross negligence or willful misconduct."

1.07 Section 12.1 shall be amended to read in its entirety as follows:

"This AGREEMENT shall become effective as of February 1, 2012 and shall continue in effect until December 31, 2026. This AGREEMENT may be renewed for an additional five (5) year term (beginning January 1, 2027) upon mutual written agreement executed by both PARTIES. Both PARTIES agree to initiate negotiations in good faith no later than [***] to extend this AGREEMENT and, provided an extension is mutually agreed upon, reach a commercial agreement no later than [***] for the new contract period 2027-2031. Both PARTIES acknowledge the intent to renew the AGREEMENT once the SUBSTANCE price is mutually agreed upon, provided that business conditions have not been significantly altered for either or both PARTIES during the period between the AMENDMENT EFFECTIVE DATE of this AMENDMENT and the negotiation period defined above."

1.08 Attachment 2 (Annual License Fee Schedule) shall be replaced with Exhibit A entitled "Attachment 2 (Revised July 1, 2021) Annual License Fee Schedule" to this AMENDMENT.

1.09 Attachment 3 (Revised January 1, 2016) Substance Fees shall be replaced with Exhibit B entitled "Attachment 3 (Revised July 1, 2021) Substance Fees" to this AMENDMENT.

1.10 The Parties also agree that in addition to the execution of this AMENDMENT to the AGREEMENT, the Parties will negotiate and enter into an Amended and Restated Sitagliptin Catalyst Supply Agreement ("AMENDED AND RESTATED AGREEMENT") that will amend and supersede this AGREEMENT. This AMENDED AND RESTATED AGREEMENT will include the original AGREEMENT, all changes made to the AGREEMENT through the AMENDMENTS and any other changes deemed mutually agreeable between the Parties. The Parties agree to take commercially reasonable efforts to enter into this new AGREEMENT by [***].

2. Miscellaneous

[***] Certain information in this document has been excluded pursuant to Regulation S-K, Item 601(b)(10). Such excluded information is not material and would likely cause competitive harm to the registrant if publicly disclosed.

2.01 Effect of AMENDMENT; Joinder. Except as expressly changed by this AMENDMENT, the AGREEMENT shall remain in full force and effect in accordance with its stated terms. The AGREEMENT and the Schedules and Exhibits thereto, as amended by this AMENDMENT and all preceding AMENDMENTS, set forth the entire understanding of the parties with respect to the subject matter thereof. There are no agreements, restrictions, promises, warranties, covenants or undertakings other than those expressly set forth or referred to therein. The AGREEMENT and the Schedules and Exhibits thereto, as amended by this AMENDMENT and all preceding AMENDMENTS, supersede all prior agreements and undertakings between the parties with respect to such subject matter.

2.02 Counterparts. This AMENDMENT may be executed by the parties in separate counterparts, each of which when so executed and delivered is deemed an original. All such counterparts together constitute but one and the same instrument.

2.03 Definitions. All capitalized terms used but not defined in this AMENDMENT shall have the respective definitions assigned to such terms in the AGREEMENT.

IN WITNESS WHEREOF, the parties have caused this AMENDMENT to be signed by their duly authorized representatives as of the date and year first written above.

Codexis, Inc.

By: /s/ John Nicols
Name: John Nicols
Title: President and Chief Executive Officer
Date: August 16, 2021

Merck Sharp & Dohme Corp.

By: /s/ Rajiv Sharma
Name: Rajiv Sharma
Title: Director-Procurement
Date: September 8, 2021

[***] Certain information in this document has been excluded pursuant to Regulation S-K, Item 601(b)(10). Such excluded information is not material and would likely cause competitive harm to the registrant if publicly disclosed.

Exhibit A:

ATTACHMENT 2 (REVISED JULY 1, 2021)

ANNUAL LICENSE FEE SCHEDULE

YEAR	DATE LICENSE FEE PAYABLE	LICENSE FEE IN MILLIONS USD
01	February 1, 2013	$ [***]
02	February 1, 2014	$ [***]
03	February 1, 2015	$ [***]
04	February 1, 2016	$ [***]
05	February 1, 2017	$ [***]
06	February 1, 2018	$ [***]
07	February 1, 2019	$ [***]
08	February 1, 2020	$ [***]
09	February 1, 2021	$ [***]

Note: For the avoidance of doubt, upon execution of this amendment, prior to November 1, 2021 no License Fee shall be due to CODEXIS from MERCK on [***].

[***] Certain information in this document has been excluded pursuant to Regulation S-K, Item 601(b)(10). Such excluded information is not material and would likely cause competitive harm to the registrant if publicly disclosed.

Exhibit B:

ATTACHMENT 3 (REVISED JULY 1, 2021)

SUBSTANCE FEE SCHEDULE

SUBSTANCE Price/Volume Table 1

CUMULATIVE SUBSTANCE PURCHASE VOLUME TIER [CUMULATIVE SUBSTANCE PURCHASE VOLUME delivered commencing January 1, 2017 through January 31, 2022 (kg)		SUBSTANCE PRICE AT ≥[***] % SUBSTANCE LOADING FACTOR ($/kg)
[***]	[***]	[***]

SUBSTANCE Price/Volume Table 2

CUMULATIVE SUBSTANCE PURCHASE VOLUME TIER [CUMULATIVE SUBSTANCE PURCHASE VOLUME delivered commencing February 1, 2022 and thereafter] (kg)		SUBSTANCE PRICE AT ≥[***] % SUBSTANCE LOADING FACTOR ($/kg)
[***]	[***]	[***]

Effective [***], 2022, in the event that [***], the parties shall make commercially reasonable efforts to negotiate in good faith [***]. [***]. In all cases, throughout the Term, CODEXIS shall [***], 20[***], [***].

Exhibit 10.2

NINTH AMENDMENT TO LOAN AND SECURITY AGREEMENT

THIS NINTH AMENDMENT to Loan and Security Agreement (this "**Amendment**") is made effective as of September 30, 2021 (the "**Amendment Date**") and made by and among **WESTERN ALLIANCE BANK**, an Arizona corporation ("**Bank**") and **CODEXIS, INC.,** a Delaware corporation ("**Borrower**").

WHEREAS, Bank and Borrower have entered into that certain Loan and Security Agreement, dated as of June 30, 2017 (as amended, supplemented, restated or otherwise modified from time to time, the "**Loan Agreement**"); and

WHEREAS, Bank and Borrower desire to amend certain provisions of the Loan Agreement as provided herein and subject to the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the promises, covenants and agreements contained herein, and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Bank and Borrower hereby agree as follows:

1. Capitalized terms used herein but not otherwise defined shall have the respective meanings given to them in the Loan Agreement.

2. Section 1.1 of the Loan Agreement is hereby further amended by amending and restating the following definitions therein as follows:

"Draw Period" is the period commencing on the Closing Date and ending on the earlier of (i) December 31, 2021 and (ii) the occurrence of an Event of Default.

3. Limitation of Amendment.

   a. The amendment set forth above is effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right, remedy or obligation which the Bank or Borrower may now have or may have in the future under or in connection with any Loan Document, as amended hereby.

   b. This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, except as herein amended, are hereby ratified and confirmed and shall remain in full force and effect.

4. To induce the Bank to enter into this Amendment, Borrower hereby represents and warrants to the Bank as follows:

   a. Immediately after giving effect to this Amendment (a) the representations and warranties contained in Article 5 of the Loan Agreement are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct in all material respects as of such date), and (b) no Event of Default has occurred and is continuing;

   b. Borrower has the power and due authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

   c. The organizational documents of Borrower delivered to the Bank on the Closing Date, and updated pursuant to subsequent deliveries by the Borrower to the Bank, if any, remain true,

accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

d. The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not and will not contravene (i) any law or regulation binding on or affecting Borrower, (ii) any contractual restriction with a Person binding on Borrower, (iii) any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (iv) the organizational documents of Borrower;

e. The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration by Borrower with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made; and

f. This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and by general equitable principles.

5. Except as expressly set forth herein, the Loan Agreement shall continue in full force and effect without alteration or amendment. This Amendment and the Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements.

6. This Amendment shall be deemed effective as of the Amendment Date upon the due execution and delivery to the Bank of this Amendment by each party hereto.

7. This Amendment may be executed in any number of counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

8. This Amendment and the rights and obligations of the parties hereto shall be governed by and construed in accordance with the laws of the State of California.

[*Balance of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this Ninth Amendment to Loan and Security Agreement to be executed as of the date first set forth above.

BORROWER:

CODEXIS, INC., A DELAWARE CORPORATION

By: /s/ Ross Taylor
Name: Ross Taylor
Title: Chief Financial Officer

BANK:

WESTERN ALLIANCE BANK, AN ARIZONA CORPORATION

By: /s/ Bill Wickline
Name: Bill Wickline
Title: Managing Director

Exhibit 31.1

CERTIFICATION

I, John J. Nicols, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Codexis, 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(s) 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 subsidiaries, 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(s) 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: November 5, 2021

/s/ John J. Nicols

John J. Nicols

President and Chief Executive Officer
(principal executive officer)

Exhibit 31.2

CERTIFICATION

I, Ross Taylor, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Codexis, 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(s) 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 subsidiaries, 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(s) 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: November 5, 2021

/s/ Ross Taylor

Ross Taylor
Senior Vice President and Chief Financial Officer
(principal financial and accounting officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Codexis, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended September 30, 2021, as filed with the Securities and Exchange Commission (the "Report"), John J. Nicols, President and Chief Executive Officer of the Company and Ross Taylor, Senior Vice President and Chief Financial Officer of the Company, respectively, do each hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- The information in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 5, 2021

/s/ John J. Nicols

John J. Nicols
President and Chief Executive Officer
(principal executive officer)

/s/ Ross Taylor

Ross Taylor
Senior Vice President and Chief Financial Officer
(principal financial and accounting officer)