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

FORM 10-Q

(Mark One)

X **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the quarterly period ended **September 30, 2022**

☐ **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: **000-55264**



DYADIC INTERNATIONAL, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**45-0486747**
State or Other Jurisdiction of Incorporation or Organization	I.R.S. Employer Identification No.
140 Intracoastal Pointe Drive, Suite 404 **Jupiter, Florida**	**33477**
Address of Principal Executive Offices	Zip Code

(561) 743-8333
Registrant's Telephone Number, Including Area Code
N/A
Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report

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 X 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 X 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 X Smaller reporting company X

Emerging growth company ☐

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

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

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 $0.001 per share	DYAI	The NASDAQ Stock Market LLC

The number of shares outstanding of the registrant's Common Stock as of November 9, 2022 was 28,563,100.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report contains forward-looking statements within the meaning of the Federal securities laws, particularly under Item 2 "Management's Discussion and Analysis". All statements other than statements of historical fact are forward-looking. Examples of forward-looking statements include, but are not limited to, statements regarding industry prospects, future business, future results of operations or financial condition, future liquidity and capital resources, our ability to implement our agreements with third parties, management strategies, our competitive position and the COVID-19 pandemic. Forward-looking statements generally can be identified by use of the words "expect," "should," "intend," "anticipate," "will," "project," "may," "might," "potential," or "continue" and other similar terms or variations of them or similar terminology. Dyadic International, Inc., and its subsidiaries cautions readers that any forward-looking information is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking information. Such statements reflect the current views of our management with respect to our operations, results of operations and future financial performance.

Forward-looking statements involve many risks, uncertainties or other factors beyond Dyadic's control. These factors include, but are not limited to, (1) general economic, political and market conditions; (2) our ability to generate the required productivity, stability, purity, performance, cost, safety and other data necessary to carry out and implement our biopharmaceutical research and business plans and strategic initiatives; (3) our ability to retain and attract employees, consultants, directors and advisors; (4) our ability to implement and successfully carry out Dyadic's and third parties' research and development efforts; (5) our ability to obtain new license and research agreements; (6) our ability to maintain our existing access to, and/or expand access to third party contract research organizations and other service providers in order to carry out our research projects for ourselves and third parties; (7) competitive pressures and reliance on our key customers and collaborators; (8) our ability, and the ability of the contract research organizations and other third-party service providers with whom we are currently working with, to advance product candidates into, and successfully complete, preclinical studies and clinical trials; (9) the commercialization of our product candidates, if approved; (10) the pharmaceutical and biotech industry, governmental regulatory and other agencies' willingness to adopt, utilize and approve the use of our fungal based microbial protein production platforms and our other technologies; (11) the risk of theft, misappropriation or expiration of owned or licensed proprietary and intellectual property, genetic and biological materials owned by us and/or Danisco US, Inc. and VTT Technical Research Centre of Finland Ltd, and contract research organizations that we engage with; (12) the speculative nature and illiquidity of equity securities received as consideration from sub-licenses; (13) our expectations concerning the impact of the novel coronavirus identified as "COVID-19" on our business and operating results; and (14) other factors discussed in Dyadic's publicly available filings, including information set forth under the caption "Risk Factors" in this Quarterly Report and in our Form 10-K filed with the Securities and Exchange Commission ("SEC") on March 29, 2022. We caution you that the foregoing list of important factors is not exclusive. Any forward-looking statements are based on our beliefs, assumptions and expectations of future performance, considering the information currently available to us. Before investing in our common stock, investors should carefully read the information set forth under the caption "Risk Factors" and elsewhere in this Quarterly Report, in our Form 10-K filed with the SEC on March 29, 2022 and in our other SEC filings, which could have a material effect on our business, results of operations and financial condition. The forward-looking statements contained in this Form 10-Q are made only as of the date hereof, and except as required by law, we undertake no obligation to publicly update any forward-looking statements for any reason after the date of this Quarterly Report to conform these statements to actual results or to changes in our expectations.

PART I

Item 1. Financial Statements

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	September 30, 2022 (Unaudited)	December 31, 2021 (Audited)
Assets		
Current assets:		
Cash and cash equivalents	$ 6,739,117	$ 15,748,480
Short-term investment securities	7,461,884	4,511,780
Interest receivable	43,873	94,375
Accounts receivable	235,368	277,831
Prepaid expenses and other current assets	448,208	375,830
Total current assets	14,928,450	21,008,296
Non-current assets:		
Investment in Alphazyme	284,709	284,709
Other assets	6,003	6,117
Total assets	$ 15,219,162	$ 21,299,122
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 777,238	$ 1,547,953
Accrued expenses	987,891	709,560
Deferred research and development obligations	445,044	151,147
Deferred license revenue, current portion	176,471	147,059
Total current liabilities	2,386,644	2,555,719
Deferred license revenue, net of current portion	220,588	352,941
Total liabilities	2,607,232	2,908,660
Commitments and contingencies (Note 4)		
Stockholders' equity:		
Preferred stock, $.0001 par value:		
Authorized shares - 5,000,000; none issued and outstanding	—	—
Common stock, $.001 par value:		
Authorized shares - 100,000,000; issued shares - 40,716,602 and 40,482,659, outstanding shares - 28,463,100 and 28,229,157 as of September 30, 2022, and December 31, 2021, respectively	40,717	40,483
Additional paid-in capital	102,836,563	101,026,496
Treasury stock, shares held at cost - 12,253,502	(18,929,915)	(18,929,915)
Accumulated deficit	(71,335,435)	(63,746,602)
Total stockholders' equity	12,611,930	18,390,462
Total liabilities and stockholders' equity	$ 15,219,162	$ 21,299,122

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

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenues:				
Research and development revenue	$ 835,480	$ 692,929	$ 1,983,636	$ 2,090,541
License revenue	44,117	—	202,941	—
Total revenue	879,597	692,929	2,186,577	2,090,541
Costs and expenses:				
Costs of research and development revenue	602,847	392,544	1,418,702	1,612,810
Research and development	743,585	1,901,548	3,917,245	5,918,888
General and administrative	1,383,433	1,692,837	4,753,162	4,994,458
Foreign currency exchange loss, net	13,205	30,002	23,578	76,080
Total costs and expenses	2,743,070	4,016,931	10,112,687	12,602,236
Loss from operations	(1,863,473)	(3,324,002)	(7,926,110)	(10,511,695)
Other income:				
Interest income	54,300	3,202	87,277	49,772
Other income	—	1,605,532	250,000	1,605,532
Total other income	54,300	1,608,734	337,277	1,655,304
Net loss	$ (1,809,173)	$ (1,715,268)	$ (7,588,833)	$ (8,856,391)
Basic and diluted net loss per common share	$ (0.06)	$ (0.06)	$ (0.27)	$ (0.32)
Basic and diluted weighted-average common shares outstanding	28,391,894	28,079,157	28,302,332	27,754,597

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

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(Unaudited)

	Nine Months Ended September 30, 2022						
	Common Stock		Treasury Stock		Additional Paid-In	Accumulated	
	Shares	Amount	Shares	Amount	Capital	Deficit	Total
December 31, 2021	40,482,659	$ 40,483	(12,253,502)	$ (18,929,915)	$ 101,026,496	$ (63,746,602)	$ 18,390,462
Stock-based compensation expense	—	—	—	—	453,791	—	453,791
Issuance of common stock upon exercise of stock options	35,000	35	—	—	42,315	—	42,350
Net loss	—	—	—	—	—	(2,491,665)	(2,491,665)
March 31, 2022	40,517,659	$ 40,518	(12,253,502)	$ (18,929,915)	$ 101,522,602	$ (66,238,267)	$ 16,394,938
Stock-based compensation expense	—	—	—	—	454,500	—	454,500
Net loss	—	—	—	—	—	(3,287,995)	(3,287,995)
June 30, 2022	40,517,659	$ 40,518	(12,253,502)	$ (18,929,915)	$ 101,977,102	$ (69,526,262)	$ 13,561,443
Stock-based compensation expense	—	—	—	—	499,919	—	499,919
Issuance of common stock upon exercise of stock options	198,943	199	—	—	359,542	—	359,741
Net loss	—	—	—	—	—	(1,809,173)	(1,809,173)
September 30, 2022	40,716,602	$ 40,717	(12,253,502)	$ (18,929,915)	$ 102,836,563	$ (71,335,435)	$ 12,611,930

	Nine Months Ended September 30, 2021						
	Common Stock		Treasury Stock		Additional Paid-In	Accumulated	
	Shares	Amount	Shares	Amount	Capital	Deficit	Total
December 31, 2020	39,747,659	$ 39,748	(12,253,502)	$ (18,929,915)	$ 98,013,079	$ (50,676,351)	$ 28,446,561
Stock-based compensation expense	—	—	—	—	421,071	—	421,071
Issuance of common stock upon exercise of stock options	60,000	60	—	—	115,740	—	115,800
Net loss	—	—	—	—	—	(3,294,949)	(3,294,949)
March 31, 2021	39,807,659	$ 39,808	(12,253,502)	$ (18,929,915)	$ 98,549,890	$ (53,971,300)	$ 25,688,483
Stock-based compensation expense	—	—	—	—	446,120	—	446,120
Issuance of common stock upon exercise of stock options	525,000	525	—	—	869,815	—	870,340
Net loss	—	—	—	—	—	(3,846,174)	(3,846,174)
June 30, 2021	40,332,659	$ 40,333	(12,253,502)	$ (18,929,915)	$ 99,865,825	$ (57,817,474)	$ 23,158,769
Stock-based compensation expense	—	—	—	—	457,209	—	457,209
Issuance of common stock upon exercise of stock options	—	—	—	—	(590)	—	(590)
Net loss	—	—	—	—	—	(1,715,268)	(1,715,268)
September 30, 2021	40,332,659	$ 40,333	(12,253,502)	$ (18,929,915)	$ 100,322,444	$ (59,532,742)	$ 21,900,120

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

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(Unaudited)

	Nine Months Ended September 30,	
	2022	**2021**
Cash flows from operating activities		
Net loss	$ (7,588,833)	$ (8,856,391)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	1,408,210	1,324,400
Amortization of held-to-maturity securities, net	37,094	254,193
Gain on investment in BDI	—	(1,605,532)
Foreign currency exchange loss (gain), net	23,579	76,081
Changes in operating assets and liabilities:		
Interest receivable	50,502	37,454
Accounts receivable	(14,837)	72,051
Prepaid expenses and other current assets	(70,051)	(289,481)
Accounts payable	(716,964)	(47,033)
Accrued expenses	278,331	352,713
Deferred research and development obligation	293,897	39,664
Deferred license revenue	(102,941)	—
Net cash used in operating activities	**(6,402,013)**	**(8,641,881)**
Cash flows from investing activities		
Purchases of held-to-maturity investment securities	(8,487,198)	(11,283,940)
Proceeds from maturities of investment securities	5,500,000	10,400,000
Proceeds from the sale of investment in BDI	—	1,605,532
Net cash (used in) provided by investing activities	**(2,987,198)**	**721,592**
Cash flows from financing activities		
Proceeds from exercise of options	402,091	985,550
Net cash provided by financing activities	**402,091**	**985,550**
Effect of exchange rate changes on cash	(22,243)	(41,695)
Net decrease in cash and cash equivalents	**(9,009,363)**	**(6,976,434)**
Cash and cash equivalents at beginning of period	15,748,480	20,637,045
Cash and cash equivalents at end of period	$ **6,739,117**	$ **13,660,611**

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

Note 1: Organization and Summary of Significant Accounting Policies

Description of Business

Dyadic International, Inc. ("Dyadic", "we", "us", "our", or the "Company") is a global biotechnology company based in Jupiter, Florida with operations in the United States and a satellite office in the Netherlands, and it utilizes a number of third-party consultants and research organizations to carry out the Company's research and development activities.

The Company's proprietary gene expression and protein production platforms are based on the highly productive and scalable fungus Thermothelomyces heterothallica (*formerly Myceliophthora thermophila)*. Our lead technology, C1-cell protein production platform, is based on an industrially proven microorganism (named C1). The Company has also developed the Dapibus™ filamentous fungal based microbial protein production platform to enable the rapid development and large-scale manufacture of low-cost proteins, metabolites and other biologic products for use in non-pharmaceutical applications, such as food, nutrition, and wellness.

On December 31, 2015, the Company sold its industrial technology business to Danisco USA ("Danisco"), the industrial biosciences business of DuPont (NYSE: DD) (the "DuPont Transaction"). As part of the DuPont Transaction, Dyadic retained co-exclusive rights to the C1-cell protein production platform for use in all human and animal pharmaceutical applications, and currently the Company has the exclusive ability to enter into sub-license agreements (subject to the terms of the license and to certain exceptions) for use in all human and animal pharmaceutical applications. Danisco retained certain rights to utilize the C1-cell protein production platform in pharmaceutical applications, including the development and production of pharmaceutical products, for which it will be required to make royalty payments to Dyadic upon commercialization. In certain circumstances, Dyadic may owe a royalty to either Danisco or certain licensors of Danisco, depending upon whether Dyadic elects to utilize certain patents either owned by Danisco or licensed in by Danisco.

The Company has been focused on the animal and human biopharmaceutical industries, specifically in further improving and applying the proprietary C1-cell protein production platform into a safe and efficient protein production platform to help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs and other biological products at flexible commercial scales.

The Company's lead product, DYAI-100, also known as C1-SARS-CoV-2 RBD vaccine, is a novel receptor-binding domain (RBD) recombinant vaccine, highly expressed in C1-cell protein production platform in prevention of COVID-19. The Company anticipates starting a phase 1 clinical trial in South Africa in late 2022 to assess the safety, reactogenicity, and immunogenicity of the C1-SARS-CoV-2 RBD vaccine, administered as a booster, in healthy volunteers.

Impact of COVID-19

The outbreak of COVID-19 has led to adverse impacts on the U.S. and global economies and created uncertainty regarding the potential impact to the Company's employees, operations, and research projects.

The extent to which the COVID-19 pandemic will directly or indirectly impact our business will depend on future developments that are highly uncertain, including as a result of new information that may emerge concerning the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its variants and the actions taken and the level of success to contain or treat the SARS-CoV-2 virus and its variants, the economic impact on local, regional, national and international business partners and markets, delays or disruptions in our on-going research projects, and unavailability of the employees of the Company or third-party contract research organizations with whom we conduct business, due to illness or quarantines, all of which remain uncertain at this time. Management is actively monitoring this situation and the possible effects on its financial condition, liquidity, operations, vendors, industry, and workforce. Even after the COVID-19 pandemic has subsided, the Company may continue to experience adverse impacts to its business because of economic recession or depression that has occurred or may occur in the future. Currently, these have not materially impacted our development timelines and we continue to adapt to the current environment to minimize the effect to our business. However, given the daily evolution of COVID-19 and the ongoing response to curb its spread (including government travel and meeting restrictions), we may experience more pronounced disruptions in our operations and impact to our results of operations, financial condition, or liquidity in the future.

Liquidity and Capital Resources

We rely on our existing cash and cash equivalents, investments in debt securities, and operating cash flows to provide the working capital needs for our operations. We believe that our existing cash position and investment in investment grade securities will be adequate to meet our operational, business, and other liquidity requirements for at least the next twelve (12) months. However, in the event our financing needs for the foreseeable future are not able to be met by our existing cash, cash equivalents and investments, we would seek to raise funds through public or private equity offerings, and through other means to meet our financing requirements. Additionally, the Company has been self-funding our DYAI-100 vaccine candidate research, pre-clinical, regulatory and CMC guidance, CMC manufacturing and regulatory filings for the anticipated Phase 1 clinical trial in South Africa to demonstrate the safety of a protein produced from the C1-cell protein production platform in humans. There is no assurance that external funding will be available at acceptable terms to continue advancing our DYAI-100 vaccine candidate beyond a Phase 1 trial if such trial is successful.

Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements, including the accounts of the Company and its wholly owned subsidiaries, have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") and applicable rules and regulations of the Securities and Exchange Commission ("SEC") regarding interim financial reporting. Certain information and footnote disclosures normally included in consolidated financial statements have been condensed or omitted pursuant to such rules and regulations. All significant intra-entity transactions and balances have been eliminated in consolidation. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with the audited consolidated financial statements and footnotes as of and for the year ended December 31, 2021, included in our Form 10-K which was filed with the SEC on March 29, 2022.

In the opinion of management, the accompanying unaudited interim consolidated financial statements reflect all adjustments, which are of a normal recurring nature, considered necessary for a fair presentation of all periods presented. The results of the Company's operations for any interim periods are not necessarily indicative of the results of operations for any other interim period or for a full fiscal year.

Since concluding the DuPont Transaction, the Company has conducted business in one operating segment, which is identified by the Company based on how resources are allocated, and operating decisions are made. Management evaluates performance and allocates resources based on the Company as a whole.

Use of Estimates

The preparation of these consolidated financial statements in accordance with GAAP requires management to make estimates and judgments that affect the reported amount of assets and liabilities and related disclosure of contingent assets and liabilities at the date of our consolidated financial statements and the reported amounts of revenues and expenses during the applicable period. Actual results may differ from these estimates under different assumptions or conditions. Such differences could be material to the consolidated financial statements.

Concentrations and Credit Risk

The Company's financial instruments that are potentially subject to concentrations of credit risk consist primarily of cash and cash equivalents, investment securities, and accounts receivable. At times, the Company has cash, cash equivalents, and investment securities at financial institutions exceeding the Federal Depository Insurance Company ("FDIC") and the Securities Investor Protection Corporation ("SIPC") insured limit on domestic currency and the Netherlands' FDIC counterpart for foreign currency. The Company only deals with reputable financial institutions and has not experienced any losses in such accounts.

For each of the three months ended September 30, 2022 and 2021, the Company's revenue was generated from eight customers. For each of the nine months ended September 30, 2022 and 2021, the Company's revenue was generated from thirteen customers. As of September 30, 2022 and December 31, 2021, the Company's accounts receivable was from four and eight customers, respectively. The loss of business from one or a combination of the Company's customers could adversely affect its operations.

The Company conducts operations in the Netherlands through its foreign subsidiary and generates a portion of its revenues from customers that are located outside of the United States. For the three months ended September 30, 2022 and 2021, the Company had four and five customers outside of the United States (i.e., European and Asian customers) that accounted for approximately $133,000 or 16.0% and $478,000 or 69.1% of the revenue, respectively. For the nine months ended September 30, 2022 and 2021, the Company had six and seven customers outside of the United States that accounted for approximately $509,000 or 25.6% and $1,599,000 or 76.5% of the revenue, respectively.

As of September 30, 2022, the Company had two customers outside of the United States (i.e., European and Asian customers) that accounted for approximately $43,000 or 17.8% of accounts receivable. As of December 31, 2021, the Company had four customers outside of the United States that accounted for approximately $157,000 or 56.4% of accounts receivable.

The Company uses several contract research organizations ("CROs") to conduct its research projects. For the three months ended September 30, 2022 and 2021, three and two CROs accounted for approximately $1,352,000 or 99.5% and $1,982,000 or 97.2% of total research services we purchased, respectively. For the nine months ended September 30, 2022 and 2021, three CROs accounted for approximately $4,146,000 or 97.4% and $6,621,000 or 96.9% of total research services we purchased, respectively. As of September 30, 2022 and December 31, 2021, three and two CROs accounted for approximately $714,000 or 91.9% and $1,312,000 or 84.8% of the accounts payable, respectively. The loss of one CRO or a combination of the Company's CROs could adversely affect its operations.

Cash and Cash Equivalents

We treat highly liquid investments with original maturities of three months or less when purchased as cash equivalents, including money market funds, which are unrestricted for withdrawal or use.

Investment Securities

The Company invests excess cash balances in short-term and long-term investment grade securities. Short-term investment securities mature within twelve (12) months or less, and long-term investment securities mature over twelve (12) months from the applicable reporting date. Management determines the appropriate classification of its investments at the time of purchase and reevaluates the classifications at each balance sheet date. The Company's investments in debt securities have been classified and accounted for as held-to-maturity. Held-to-maturity securities are those securities that the Company has the ability and intent to hold until maturity. Held-to-maturity securities are recorded at amortized cost, adjusted for the amortization or accretion of premiums or discounts. Premiums and discounts are amortized over the life of the related held-to-maturity security. When a debt security is purchased at a premium, both the face value of the debt and premium amount are reflected as investing outflow. Other-than-temporary impairment charges, if incurred, will be included in other income (expense).

As of September 30, 2022 and December 31, 2021, all of our money market funds were invested in U.S. Government money market funds. The Company's investments in money market funds have been classified and accounted for as available-for-sale securities and presented as cash equivalents on the consolidated balance sheets. The Company did not have any investment securities classified as trading as of September 30, 2022, or December 31, 2021.

Accounts Receivable

Accounts receivable consist of billed receivables currently due from customers and unbilled receivables. Unbilled receivables represent the excess of contract revenue (or amounts reimbursable under contracts) over billings to date. Such amounts become billable in accordance with the contract terms, which usually consider the passage of time, achievement of certain milestones or completion of the project.

Outstanding account balances are reviewed individually for collectability. The allowance for doubtful accounts is the Company's best estimate of the amount of probable credit losses in the Company's existing accounts receivable. Substantially all of our accounts receivable were current and include unbilled amounts that will be billed and collected over the next twelve (12) months. There was no allowance for doubtful accounts as of September 30, 2022, and December 31, 2021.

Accounts receivable consist of the following:

	September 30, 2022	December 31, 2021
	(Unaudited)	(Audited)
Billed receivable	$ 30,600	$ 101,175
Unbilled receivable	204,768	176,656
	$ 235,368	$ 277,831

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following:

	September 30, 2022	December 31, 2021
	(Unaudited)	(Audited)
Prepaid insurance	$ 382,045	$ 326,712
Prepaid expenses - various	55,075	45,839
Prepaid research and development expenses	10,920	—
Prepaid taxes	168	3,279
	$ 448,208	$ 375,830

Accounts Payable

Accounts payable consist of the following:

	September 30, 2022	December 31, 2021
	(Unaudited)	(Audited)
Research and development expenses	$ 725,216	$ 1,363,889
Legal expenses	17,616	27,675
Other	34,406	156,389
	$ 777,238	$ 1,547,953

Accrued Expenses

Accrued expenses consist of the following:

	September 30, 2022	December 31, 2021
	(Unaudited)	(Audited)
Research and development expenses	$ 634,951	$ 194,250
Employee wages and benefits	258,130	405,758
Other	94,810	109,552
	$ 987,891	$ 709,560

Revenue Recognition

The Company has no pharmaceutical products approved for sale at this point. All of our revenue to date has been research revenue from third-party collaborations and government grants, as well as revenue from sublicensing agreements and collaborative arrangements, which may include upfront payments, options to obtain a license, payment for research and development services, milestone payments and royalties, in the form of cash or non-cash considerations (e.g., minority equity interest).

Revenue related to research collaborations and agreements: The Company typically performs research and development services as specified in each respective agreement on a best efforts basis, and recognizes revenue from research funding under collaboration agreements in accordance with the 5-step process outlined in ASC Topic 606 ("Topic 606"): (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We recognize revenue when we satisfy a performance obligation by transferring control of the service to a customer in an amount that reflects the consideration that we expect to receive. Depending on how the performance obligation under our license and collaboration agreements is satisfied, we elected to recognize the revenue either at a point in time or over time by using the input method under Topic 606 to measure the progress toward complete satisfaction of a performance obligation.

Under the input method, revenue will be recognized based on the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation. The Company believes that the cost-based input method is the best measure of progress to reflect how the Company transfers its performance obligation to a customer. In applying the cost-based input method of revenue recognition, the Company uses actual costs incurred relative to budgeted costs to fulfill the performance obligation. These costs consist primarily of full-time equivalent effort and third-party contract costs. Revenue will be recognized based on actual costs incurred as a percentage of total budgeted costs as the Company completes its performance obligations.

A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

Revenue related to grants: The Company may receive grants from governments, agencies, and other private and not-for-profit organizations. These grants are intended to be used to partially or fully fund the Company's research collaborations, including opportunities arising in connection with COVID-19 that the Company is pursuing with certain collaborators. However, most, if not all, of such potential grant revenues, if received, is expected to be earmarked for third parties to advance the research required, including preclinical and clinical trials for SARS-CoV-2 vaccines and/or antibodies candidates.

Revenue related to sublicensing agreements: If the sublicense to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue allocated to the license when technology is transferred to the customer and the customer is able to use and benefit from the license.

Customer options: If the sublicensing agreement includes customer options to purchase additional goods or services, the Company will evaluate if such options are considered material rights to be deemed as separate performance obligations at the inception of each arrangement.

Milestone payments: At the inception of each arrangement that includes development, commercialization, and regulatory milestone payments, the Company evaluates whether the achievement of the milestones is considered probable and estimates the amount to be included in the transaction price. If the milestone payment is in exchange for a sublicense and is based on the sublicensee's subsequent sale of product, the Company recognizes milestone payment by applying the accounting guidance for royalties. To date, the Company has not recognized any milestone payment revenue resulting from any of its sublicensing arrangements.

Royalties: With respect to licenses deemed to be the predominant item to which the sales-based royalties relate, including milestone payments based on the level of sales, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its sublicensing arrangements.

We invoice customers based on our contractual arrangements with each customer, which may not be consistent with the period that revenues are recognized. When there is a timing difference between when we invoice customers and when revenues are recognized, we record either a contract asset (unbilled accounts receivable) or a contract liability (deferred research and development obligations), as appropriate. If upfront fees or considerations related to sublicensing agreement are received prior to the technology transfer, the Company will record the amount received as deferred revenue from licensing agreement.

We are not required to disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

The Company adopted a practical expedient to expense sales commissions when incurred because the amortization period would be one year or less.

Research and Development Costs

Research and development ("R&D") costs are expensed as incurred. R&D costs are for the Company's internally funded pharmaceutical programs and other governmental and commercial projects.

Research and development costs consist of personnel-related costs, facilities, research-related overhead, services from independent contract research organizations, and other external costs. Research and development costs, including related party, during the three and nine months ended September 30, 2022 and 2021 were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
Outside contracted services	$ 550,750	$ 1,700,280	$ 3,302,911	$ 5,396,227
Personnel related costs	186,993	174,856	593,258	472,605
Facilities, overhead and other	5,842	26,412	21,076	50,056
	$ 743,585	$ 1,901,548	$ 3,917,245	$ 5,918,888

Foreign Currency Transaction Gain or Loss

The Company and its foreign subsidiary use the U.S. dollar as its functional currency, and initially measure the foreign currency denominated assets and liabilities at the transaction date. Monetary assets and liabilities are then re-measured at exchange rates in effect at the end of each period, and property and non-monetary assets and liabilities are converted at historical rates.

Fair Value Measurements

The Company applies fair value accounting for certain financial instruments that are recognized or disclosed at fair value in the financial statements. The Company defines fair value as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- *Level 1* – Quoted prices in active markets for identical assets or liabilities.
- *Level 2* – Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- *Level 3* – Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

The Company's financial instruments included cash and cash equivalents, investment in debt securities, accounts receivable, accounts payable and accrued expenses, accrued payroll and related liabilities, deferred research and development obligations and deposits. The carrying amount of these financial instruments, except for investment in debt securities, approximates fair value due to the short-term maturities of these instruments. The Company's short-term and long-term investments in debt securities are recorded at amortized cost, and their estimated fair value amounts are provided by the third-party broker service for disclosure purposes.

Non-Marketable Investments

The Company also holds investments in non-marketable equity securities of privately held companies, which usually do not have a readily determinable fair value. Our policy is to measure these investments at cost less impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer such observable price changes may include instances where the investee issues equity securities to new investors, thus creating a new indicator of fair value, as an example. On a quarterly basis, we perform a qualitative assessment considering impairment indicators to evaluate whether these investments are impaired and also monitor for any observable price changes. If indicators of impairment exist, we will prepare a quantitative assessment of the fair value of our equity investments, which may include using both the market and income approaches which require judgment and the use of estimates, including discount rates, investee revenues and costs, and available comparable market data of private and public companies, among others. Valuations of such privately held companies are inherently complex and uncertain due to the lack of liquid market for the company's securities. In addition, such investments are inherently risky in that such companies are typically at an early stage of development, may have no or limited revenues, may not be or may never become profitable, may not be able to secure additional funding or their technologies, services or products may not be successfully developed or introduced into the market.

Income Taxes

For the nine months ended September 30, 2022, there were no provision for income taxes or unrecognized tax benefits recorded. As of September 30, 2022 and December 31, 2021, deferred tax assets were approximately $15.7 million and $13.0 million, respectively. Due to the Company's history of operating losses and the uncertainty regarding our ability to generate taxable income in the future, the Company has established a 100% valuation allowance against deferred tax assets as of September 30, 2022 and December 31, 2021.

Other Income

The other income recognized during the nine months ended September 30, 2022 was related to a settlement payment we received from the termination of term sheet of a proposed license and collaboration.

Comprehensive Income (Loss)

Comprehensive income (loss) includes net income (loss) and other revenue, expenses, gains and losses that are recorded as an element of shareholders' equity but are excluded from net income (loss) under GAAP. The Company does not have any significant transactions that are required to be reported in other comprehensive income (loss), and therefore, does not separately present a statement of comprehensive income (loss) in its consolidated financial statements.

Stock-Based Compensation

We recognize all share-based payments to employees, consultants, and our board of directors ("Board of Directors"), as non-cash compensation expense, in research and development expenses or general and administrative expenses in the consolidated statement of operations based on the grant date fair values of such payments. Stock-based compensation expense recognized each period is based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Forfeitures are recorded as they occur.

Net Loss Per Share

Basic net loss per share is computed by dividing net loss available to common shareholders by the weighted average number of common stock shares outstanding during the reporting period. Diluted net loss per share adjusts the weighted average number of common stock shares outstanding for the potential dilution that could occur if common stock equivalents, such as stock options were exercised and converted into common stock, calculated by applying the treasury stock method.

For the three and nine months ended September 30, 2022 and 2021, the effect of the potential exercise of options to purchase 5,281,097 and 4,824,215 shares of common stock, respectively, were excluded from the computation of diluted net loss per share as their effect would have been anti-dilutive.

Recently Adopted Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which modifies the measurement of expected credit losses of certain financial instruments. ASU 2016-13 will be effective for the Company beginning in the first quarter of 2023. The Company does not expect ASU 2016-13 to have a material impact on our consolidated financial positions, results of operations, and cash flows.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*. The amendments of this update simplify the accounting for income taxes by removing certain exceptions related to the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The Company adopted ASU 2019-12 on January 1, 2021, and adoption of ASU 2019-12 did not have any material impact on our consolidated financial positions, results of operations, cash flows and related disclosures.

Other pronouncements issued by the FASB or other authoritative accounting standards group with future effective dates are either not applicable or not significant to our consolidated financial statements.

Note 2: Cash, Cash Equivalents, and Investments

The Company's investments in debt securities are classified as held-to-maturity and are recorded at amortized cost, and its investments in money market funds are classified as cash equivalents. The following table shows the Company's cash, available-for-sale securities, and investment securities by major security type as of September 30, 2022, and December 31, 2021:

	September 30, 2022 (Unaudited)				
	Level (1)	Fair Value	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Adjusted Cost
Cash and Cash Equivalents					
Cash		$ 654,971	$ —	$ —	$ 654,971
Money Market Funds	1	6,084,146	—	—	6,084,146
Subtotal		6,739,117	—	—	6,739,117
Short-Term Investment Securities (2)					
Corporate Bonds (3)	2	7,397,900	—	(63,984)	7,461,884
Total		$ 14,137,017	$ —	$ (63,984)	$ 14,201,001

	December 31, 2021 (Audited)				
	Level (1)	Fair Value	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Adjusted Cost
Cash and Cash Equivalents					
Cash		$ 1,377,094	$ —	$ —	$ 1,377,094
Money Market Funds	1	14,371,386	—	—	14,371,386
Subtotal		15,748,480	—	—	15,748,480
Short-Term Investment Securities (2)					
Corporate Bonds (3)	2	4,509,285	—	(2,495)	4,511,780
Total		$ 20,257,765	$ —	$ (2,495)	$ 20,260,260

Notes:
(1) Definition of the three-level fair value hierarchy:
- Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2 - Other inputs that are directly or indirectly observable in the markets
- Level 3 - Inputs that are generally unobservable

(2) Short-term investment securities will mature within 12 months or less, from the applicable reporting date.
(3) For the three months ended September 30, 2022 and 2021, the Company paid discounts of $5,072 and $0 to purchase held-to-maturity investment securities, respectively. For the nine months ended September 30, 2022 and 2021, the Company paid premiums of $24,198 and $283,940 to purchase held-to-maturity investment securities, respectively. For the year ended December 31, 2021 the Company paid premium of $283,940 to purchase held-to-maturity investment securities.

The Company considers the declines in market value of its investment portfolio to be temporary in nature. The Company's investment policy requires investment securities to be investment grade and held to maturity with the primary objective to maintain a high degree of liquidity while maximizing yield. When evaluating an investment for other-than-temporary impairment, the Company reviews factors such as the length of time and extent to which fair value has been below its cost basis, the financial condition of the issuer and any changes thereto, changes in market interest rates, and whether it is more likely than not the Company will be required to sell the investment before recovery of the investment's cost basis. As of September 30, 2022, the Company does not consider any of its investments to be other-than-temporarily impaired.

Note 3: Research and Collaboration Agreements, Sublicense Agreements, and Investments in Privately Held Companies

A Global Food Ingredient Company

On May 10, 2022, the Company entered into a Joint Development Agreement (the "JDA") with a Global Food Ingredient Company ("GFIC") to develop and manufacture a number of animal free ingredient products using the Company's biotechnologies.

Under the terms of the JDA, Dyadic is to develop its proprietary production cell lines for the manufacture of animal free ingredient product candidates. The research collaboration will be fully funded by the GFIC in an amount approximating $4.1 million over two years. Dyadic will receive certain defined "Success Fees" (the "Success Fees"), upon researching certain productivity and activity levels and milestones at different stages of the collaboration. Dyadic will also receive a "Commercialization Fee" (the "Commercialization Fee") of low eight figures upon commercialization, and a royalty payment of low single digits based on commercial sales.

The JDA can be terminated in its entirety, or any sublicense granted, in each case with or without cause, by either party within 90 business days after receipt of written termination notice.

Accounting Treatment

The Company considered the guidance in ASC 808, Collaborative Arrangements (ASC 808) and determined the JDA is not applicable to such guidance. The Company concluded that GFIC represented a customer and applied relevant guidance from ASC 606, Revenue from Contracts with Customers (ASC 606) to evaluate the appropriate accounting for the JDA.

The Company identified the following promises under the JDA: (1) to provide agreed-upon research and development services with GFIC's proteins; (2) to nominate a project manager and two additional steering committee members to meet at least quarterly to review the project's status; (3) to grant a R&D license in consideration of GFIC's payment of Service Fees and its other project obligations; and (4) to grant a commercial license in consideration of and subject to GFIC's payment of the commercialization fee and royalties.

The Company concluded that, while participation on the joint steering committee was capable of being distinct from other promises, such participation is considered to be part of the research and development services and does not constitute the transfer of a good or service within the context of the JDA. Additionally, the Company concluded that the promise to grant a commercial license is a contingent promise based upon the success of the research project which is outside the control of both the Company and the GFIC, and therefore, it should be accounted for in the same way as a customer option. The Company further concluded that the contingent promise to grant a commercial license is not considered a material right and does not give rise to a separate performance obligation.

Based on management's assessment, the Company concluded the agreed-upon research and development services and the R&D license under the R&D plan should be combined and accounted for as one single performance obligation in consideration of the service fees. Accordingly, the Company records the service fees as research and development revenue using the cost-based input method in accordance with the Company's policy (see Note 1).

Under the JDA, the Company is also eligible to receive Success Fees upon certain milestones, a Commercialization Fee upon commercialization, and future sales-based royalty payments. The Success Fees are considered constrained variable considerations and excluded from the transaction price at inception. The Company will re-evaluate the Success Fees and estimate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The Company will not recognize revenue related to the Commercialization Fee and sales-based royalty until the associated event occurs.

For the three and nine months ended September 30, 2022, the Company recorded research and development revenues of approximately $339,000 and $452,000, respectively, in connection with the JDA.

Phibro/Abic

On February 10, 2022, the Company entered into an exclusive sub-license agreement with Abic Biological Laboratories Ltd. ("Abic"), an affiliate of Phibro Animal Health Corporation ("Phibro") to provide services for a targeted disease (the "Phibro/Abic Agreement"). The Phibro/Abic Agreement was an addendum to the initially non-exclusive sub-license agreement the Company signed with Phibro on July 1, 2020. According to the Phibro/Abic Agreement, the Company received an exclusivity payment of $100,000 in April 2022. In July 2022, the Company expanded the license agreement to include an additional research project to develop another animal vaccine for livestock.

Phibro/Abic may terminate the Phibro/Abic Agreement in its entirety, or any sublicense granted, in each case with or without cause at any time upon 90 days prior written notice to Dyadic.

Accounting Treatment

The Company considered the guidance in ASC 808, Collaborative Arrangements (ASC 808) and determined the Phibro Agreement is not applicable to such guidance. The Company concluded that Phibro/Abic represented a customer and applied relevant guidance from ASC 606, Revenue from Contracts with Customers (ASC 606) to evaluate the appropriate accounting for the Phibro/Abic Agreement.

The Company identified the following obligations under the Phibro/Abic Agreement: (1) an exclusive right to utilize the C1-cell protein production platform for certain disease; (2) our obligation to provide agreed-upon research and development services; (3) research report to be provided to Phibro/Abic based on the requirements of the agreement.

Based on management's assessment, the Company concluded two performance obligations should be accounted for separately: (1) the agreed-upon research and development services, and (2) the right to exclusively access and use C1-cell protein production platform for certain disease.

Accordingly, the Company records the R&D services as research and development revenue using the cost-based input method in accordance with the Company's policy (see Note 1).

Under the Phibro/Abic Agreement, the Company is eligible to receive an exclusivity payment of $100,000, certain milestone payment upon regulatory approval, and future sales-based royalty payments. The milestone payment is considered constrained variable consideration and excluded from the transaction price at inception. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The Company will not recognize revenue related to sales-based royalty until the associated event occurs.

For the three and nine months ended September 30, 2022, the Company recorded $0 and $100,000, respectively, from the exclusivity payment as license revenue. For the three and nine months ended September 30, 2022, the Company recorded research and development revenues of approximately $32,000 and $86,000, respectively, in connection with the Phibro/Abic Agreement.

Janssen

On December 16, 2021, the Company entered into a Research, License, and Collaboration Agreement (the "Janssen Agreement") for the manufacture of therapeutic protein candidates using its C1-cell protein production platform with Janssen Biotech, Inc., one of the Janssen Pharmaceutical Companies of Johnson & Johnson ("Janssen"). Pursuant to the terms of the Janssen Agreement: (i) Janssen will pay Dyadic an upfront payment of $500,000 for a non-exclusive license to utilize the C1-cell protein production platform to develop C1 production cell lines for the manufacturing of Janssen's therapeutic protein candidates against several biologic targets, (ii) Janssen will provide R&D funding up to €1.6 million to develop and assess C1 production cell lines for its product candidates, (iii) Janssen will have an option to pay a mid-seven figure payment for an exclusive license from Dyadic to use the C1-cell protein production platform for the manufacturing of therapeutic proteins directed to one specific target, and upon exercise, Janssen would have the right to add additional non-exclusive targets to the collaboration and Dyadic would complete the technology transfer of the C1-cell protein production platform, fully enabling Janssen to internally develop C1 cell lines against licensed targets, and upon successful completion of the technology transfer, Dyadic is eligible to receive a milestone payment in the low seven figures, (iv) for each product candidate, Dyadic could receive development and regulatory milestones in the mid-seven figures, and (v) Dyadic could receive aggregate commercial milestone payments in the low nine figures per product, subject to a limit on the number of such products, with the amount depending on the cumulative amount of active pharmaceutical ingredient produced by Janssen for each product manufactured with Dyadic's C1-cell protein production platform.

Janssen may terminate the Janssen Agreement in its entirety, or on a country-by-country or other jurisdiction-by-other jurisdiction basis, for any or no reason, upon 90 days' prior written notice to Dyadic.

Accounting Treatment

The Company considered ASC 808, Collaborative Arrangements (ASC 808) and determined the Janssen Agreement is not applicable to such guidance. The Company concluded that Janssen represented a customer and applied relevant guidance from ASC 606, Revenue from Contracts with Customers (ASC 606) to evaluate the appropriate accounting for the Janssen Agreement.

The Company identified the following promises under the Janssen Agreement: (1) a right to access the C1-cell protein production platform; (2) our obligation to provide agreed upon research and development services under the R&D Funding; (3) participation in the joint steering committee; (4) the reservation of targets; (5) the grant of option to obtain a research license of intellectual property and know-how rights of its C1-cell protein production platform to produce target proteins; (6) our obligation to complete tech transfer activities upon the exercise of a research license; and (7) the options to obtain a commercial license and an exclusive license on specific targets.

The Company concluded that the research and development services under the R&D Funding represents a separate unit of account, because it is a prerequisite to the license agreement and a third-party contract research organization will be used to conduct the research. The Company also concluded that, while participation on the joint steering committee was capable of being distinct, participation is part of the research and development services and does not constitute the transfer of a good or service to Janssen within the context of the contract.

Other promises including the reservation of targets and tech transfer are not capable of being distinct from the licenses within the context of the contract and should therefore not be treated as a separate performance obligation. Additionally, at contract inception, the Company evaluated Janssen's options for a research license, commercial license and to exercise exclusive rights on certain targets in order to determine whether these options to purchase additional license rights at their standalone selling prices provide a material right (i.e., an optional good or service offered for free or at a discount) to the customer. The Company concluded that these options in the Janssen Agreement are not material rights and do not give rise to a separate performance obligation. Instead, these options are deemed as marketing offers, and additional option fee payments are recognized or being recognized as revenue when Janssen exercises the option. The exercise of an option that does not represent a material right is treated as a separate contract for accounting purposes.

Based on management's assessment, the Company concluded two performance obligations should be accounted for separately: (1) the agreed-upon research and development services, and (2) the right to access C1-cell protein production platform under the research plan. Accordingly, the Company records the €1.6 million of R&D Funding as research and development revenue using the cost-based input method in accordance with the Company's policy (see Note 1).

As noted above, the Company received a non-refundable upfront payment of $0.5 million to reserve the initial protein targets until Janssen decides to exercise an option to license in the future, which represents a right to access the C1-cell protein production platform prior to using it. The Company recognizes the upfront payment of $0.5 million over the target reservation period, during which Janssen can obtain a research and/or commercial license and/or an exclusive license on specific targets or recognize in full when the contract is terminated.

The Company also excluded option exercise fees and future milestone payments that the Company was eligible to receive under the Janssen Agreement, from the initial transaction price. The Company will not recognize revenue related to option exercise payments and future milestone payments until the associated event occurs, or relevant thresholds are met. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

As of September 30, 2022, the upfront payment was recorded in deferred license revenue, current and non-current portion in the amount of $176,000 and $221,000, respectively. For the three and nine months ended September 30, 2022, the Company recognized $44,000 and $103,000 of the upfront payment as license revenue, respectively. For the three and nine months ended September 30, 2022, the Company recorded research and development revenues of $172,000 and $418,000, respectively, in connection with the Janssen Agreement.

IDBiologics, Inc.

On July 8, 2020, the Company entered into a Common Stock Purchase Agreement (the "IDBiologics Agreement") with IDBiologics, Inc ("IDBiologics"). IDBiologics is a private biotechnology company focused on the development of human monoclonal antibodies for the treatment and prevention of serious infectious diseases. The Company was founded in 2017 and seeded by Vanderbilt University Medical Center in response to the repeated threats of epidemics around the world including Ebola in West Africa and Zika in the Americas. IDBiologics is developing a portfolio of monoclonal antibodies against SARS-CoV-2, influenza and Zika viruses.

Pursuant to the term of the IDBiologics Agreement, on July 8, 2021, Dyadic received 129,661 shares of IDBiologics' common stock, which represent 0.37% of IDBiologics' outstanding equity, in exchange of a feasibility study performed by Dyadic. Dyadic provided services including the use of Dyadic's C1-cell technology to express a SARS-CoV-2 monoclonal antibody which IDBiologics licensed from the Vanderbilt Vaccine Center. The Company determined not to record the basis for its equity interest in IDBiologics because the fair value amount of the service provided is considered immaterial.

The Company evaluated the nature of its equity interest in IDBiologics and determined that IDBiologics is a Variable Interest Entity ("VIE") due to the capital structure of the entity. However, the Company is not the primary beneficiary of IDBiologics as Dyadic does not have the power to control or direct the activities of IDBiologics that most significantly impact the VIE. As a result, the Company does not consolidate its investment in IDBiologics.

On April 25, 2021, the Company entered into a project agreement (the "Project Agreement") to provide additional research services to IDBiologics. For the three and nine months ended September 30, 2022, the Company recognized approximately $0 and $109,000, respectively, of research and development revenue related to IDBiologics.

As of September 30, 2022, the Company does not consider its investment in IDBiologics to be impaired, as there was no event or transaction that would change the value of this investment.

Alphazyme

On May 5, 2019, the Company entered into a sub-license agreement (the "Alphazyme Sub-License Agreement") with Alphazyme, LLC ("Alphazyme"). Under the terms of the Alphazyme Sub-License Agreement, the Company has granted to Alphazyme, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a sub-license to certain patent rights and know-how related to Dyadic's proprietary C1-cell protein production platform for the purpose of commercializing certain pharmaceutical products that are used as reagents to catalyze a chemical reaction to detect, measure, or be used as a process intermediate to produce a nucleic acid as a therapeutic or diagnostic agent.

On June 24, 2020, the Company entered into an Amended and Restated Non-Exclusive Sub-License Agreement (the "Amended Sub-License Agreement") with Alphazyme to amend and restate the Alphazyme Sub-License Agreement. Pursuant to the Amended Sub-License Agreement and in consideration of Dyadic's transfer of its C1-cell protein production platform, Alphazyme issued 2.50% of the Class A shares of Alphazyme to Dyadic, and Dyadic became a party to the Alphazyme Limited Liability Company Agreement pursuant to which the Company will agree to certain customary rights, covenants and obligations. In addition, and subject to achieving certain milestones, Alphazyme is obligated to pay a potential milestone payment and royalties on net sales, if any, which incorporate Dyadic's proprietary C1-cell protein production platform.

On December 1, 2020, an Amended and Restated Limited Liability Company Agreement with Alphazyme (the "Amended Alphazyme LLC Agreement") was entered into. Under the Amended Alphazyme LLC Agreement, Alphazyme obtained additional capital contribution fro m a third-party and Dyadic's ownership was diluted to 1.99%. As a result, the Company recorded a gain of $284,709 as its basis of investment in Alphazyme.

The Company evaluated the nature of its equity interest investment in Alphazyme and determined that Alphazyme is a VIE due to the capital structure of the entity. However, the Company is not the primary beneficiary of Alphazyme as Dyadic does not have the power to control or direct the activities of Alphazyme that most significantly impact the VIE. As a result, the Company does not consolidate its investment in Alphazyme. The Company reports its investment in Alphazyme under the cost method of accounting, given that it does not have the ability to exercise significant influence or control over Alphazyme.

As of September 30, 2022, the Company does not consider its investment in Alphazyme to be impaired, as there was no event or transaction that would change the value of this investment.

BDI

On June 30, 2017, the Company entered into a strategic Research Services Agreement (the "RSA") with Biotechnology Developments for Industry in Pharmaceuticals, S.L.U. ("BDI Pharma"), and with VLP The Vaccines Company, S.L.U. ("VLPbio"), both of which are subsidiaries of Biotechnology Developments for Industry, S.L., a Spanish biotechnology company ("BDI Holdings" and together with BDI Pharma and VLPbio, "BDI").

The Company paid EUR €1.0 million (the "RSA Initial Payment") in cash to engage BDI to develop designated C1 based product candidates and further improve the C1 manufacturing process, in consideration of which Dyadic also received a 16.1% equity interest in BDI Holdings and a 3.3% equity interest in VLPbio. Under the RSA, BDI is obligated to spend a minimum amount of EUR €936,000 over two years for the research and development project.

The Company concluded that BDI is not a VIE, because BDI has sufficient equity to finance its activities without additional subordinated financial support and its at-risk equity holders have the characteristics of a controlling financial interest. Additionally, Dyadic is not the primary beneficiary of BDI as Dyadic does not have the power to control or direct the activities of BDI or its operations. As a result, the Company does not consolidate its investments in BDI, and the financial results of BDI are not included in the Company's consolidated financial results.

The Company performed a valuation analysis of the components of the transaction and concluded that the fair value of BDI equity interest was considered immaterial, the RSA Initial Payment of approximately USD $1.1 million (EUR €1.0 million) was accounted for as a prepaid research and development collaboration payment on our consolidated balance sheet, and the collaboration payment under the RSA paid by Dyadic were expensed as the related research services were performed by BDI.

On July 26, 2021, the Company entered (i) a Sale and Purchase of Shares Agreement under which the Company agreed to sell its 16.1% equity interest in BDI Holdings, and (ii) a Sale and Purchase of Shares Agreement under which the Company agreed to sell its 3.3% equity interest in VLPBio (together the "BDI Sale"). In connection with the closing of the BDI Sale, the Company received approximately $1.6 million, net of transaction and legal expenses in August 2021. The gain generated from the BDI Sale was recorded in other income.

In connection with the BDI Sale, the Company also entered into an amendment to the Service Framework Agreement (the "Amended SFA") with BDI Pharma. Under the Amended SFA, the Company maintains the right to engage in research and development projects at BDI Pharma until June 30, 2025, with the non-compete term extending to June 30, 2030, without any other material terms and conditions changed.

For the three and nine months ended September 30, 2022, there was no research and development expense related to BDI.

Novovet and Luina Bio

On April 26, 2019, the Company entered into a sub-license agreement (the "Luina Bio Sub-License Agreement") with Luina Bio Pty Ltd. ("Luina Bio") and Novovet Pty Ltd ("Novovet"). Under the terms of the Luina Bio Sub-License Agreement, the Company granted to Novovet, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a worldwide sub-license to certain patent rights and know-how related to Dyadic's proprietary C1-cell protein production platform for the exclusive and sole purpose of commercializing certain targeted antigen and biological products for the prevention and treatment of various ailments for companion animals

In consideration of the license granted pursuant to the Luina Bio Sub-License Agreement, Dyadic received a 20% equity interest in Novovet ("Novovet Up-Front Consideration") in accordance with the terms of Novovet's Shareholder Agreement ("Shareholders Agreement") and will receive a percentage of royalties on future net sales and non-sales revenue, if any, which incorporates Dyadic's proprietary C1-cell protein production platform.

The Company evaluated the nature of its equity interest investment in Novovet and determined that Novovet is a VIE, because Novovet does not have sufficient equity to finance its activities without additional financial support from third party investors or lenders. However, the Company is not the primary beneficiary of Novovet as Dyadic does not have the power to control or direct the activities of Novovet that most significantly impact the VIE. As a result, the Company will not consolidate its investment in Novovet, but account for under the equity method investment, given that it has the ability to exercise significant influence, but not control, over Novovet.

To date Novovet has not raised the capital required to move this opportunity forward, and therefore, the Company has not transferred its C1-cell protein production platform to Novovet. Therefore, the Novovet Up-Front Consideration received under the Luina Bio Sub-License Agreement, in the form of a 20% equity interest in Novovet, does not yet meet the revenue recognition criteria under ASC 606.

On February 15, 2022, the Company sent a letter to Luina Bio Pty Ltd and Novovet Pty Ltd, indicating its intention to terminate the Luina Bio Sub-License Agreement.

On June 29, 2022, the Company sent a letter to Luina Bio Pty Ltd and Novovet Pty Ltd, to transfer our shares of Novovet Pty Ltd back to Novovet pursuant to the Shareholders Agreement.

Note 4: Commitments and Contingencies

Legal Proceedings

We are not currently involved in any litigation that we believe could have a materially adverse effect in our financial condition or results of operations. From time to time, the Company is subject to legal proceedings, asserted claims and investigations in the ordinary course of business, including commercial claims, employment and other matters, which management considers immaterial, individually and in the aggregate. The Company makes a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The requirement for these provisions is reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular case. Litigation is inherently unpredictable and costly. Protracted litigation and/or an unfavorable resolution of one or more of proceedings, claims or investigations against the Company could have a material adverse effect on the Company's consolidated financial position, cash flows or results of operations.

Note 5: Share-Based Compensation

Description of Equity Plans

The 2021 Equity Incentive Award Plan (the "2021 Plan") was adopted by the Company's Board of Directors on April 9, 2021 and approved by the Company's Annual Meeting of Shareholders (the "Annual Meeting") on June 11, 2021. The 2021 Plan serves as a successor to the Company's 2011 Equity Incentive Plan (the "2011 Plan"). Since the effective date of the 2021 Plan, all equity awards were made from the 2021 Plan, and no additional awards will be granted under the 2011 Plan. The 2021 Plan increased the number of shares available for the grant of stock options, restricted stock awards and other awards by 3,000,000 in addition to the number of shares remaining available for the grant of new awards under the 2011 Plan as of April 16, 2021.

As of September 30, 2022, the Company had 5,281,097 stock options outstanding and an additional 3,522,561 shares of common stock available for grant under the 2021 Plan. As of December 31, 2021, there were 4,774,215 stock options outstanding and an additional 4,263,386 shares of common stock available for grant under the 2021 Plan.

Stock Options

Options are granted to purchase common stock at prices that are equal to the fair value of the common stock on the date the option is granted. Vesting is determined by the Board of Directors at the time of grant. The term of any stock option awards under the Company's 2011 Plan and 2021 Plan is ten years, except for certain options granted to the contractors which are either one or three years.

The grant-date fair value of each option grant is estimated using the Black-Scholes option pricing model and amortized on a straight-line basis over the requisite service period, which is generally the vesting period, for each separately vesting portion of the award as if the award was, in substance, multiple awards. Use of a valuation model requires management to make certain assumptions with respect to selected model inputs, including the following.

Risk-free interest rate. The risk-free interest rate is based on U.S. Treasury rates with securities approximating the expected lives of options at the date of grant.

Expected dividend yield. The expected dividend yield is zero, as the Company has never paid dividends to common shareholders and does not currently anticipate paying any in the foreseeable future.

Expected stock price volatility. The expected stock price volatility was calculated based on the Company's own volatility since the DuPont Transaction. The Company reviews its volatility assumption on an annual basis and has used the Company's historical volatilities since 2016, as the DuPont Transaction resulted in significant changes in the Company's business and capital structure.

Expected life of option. The expected life of option was based on the contractual term of the option and expected employee exercise and post-vesting employment termination behavior. The Company uses the weighted average vesting period and contractual term of the option as the best estimate of the expected life of a new option, except for the options granted to the CEO (i.e., 5 or 10 years) and certain contractors (i.e., 1 or 3 years).

The assumptions used in the Black-Scholes option pricing model for stock options granted during the nine months ended September 30, 2022 are as follows:

Risk-Free interest rate	1.40% - 3.24%
Expected dividend yield	—%
Expected stock price volatility	61.30 - 61.58%
Expected life of options (in years)	5.50 - 6.25

The following table summarizes the stock option activities during the nine months ended September 30, 2022:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2021	4,774,215	$ 3.04	6.14	$ 8,413,444
Granted (1)	865,825	4.43		
Exercised	(233,943)	1.72		
Expired	(50,000)	6.22		
Canceled	(75,000)	4.81		
Outstanding at September 30, 2022	5,281,097	$ 3.27	5.72	$ 770,536
Exercisable at September 30, 2022	3,876,280	$ 2.85	4.65	$ 766,446

Notes:

(1) Represents the following stock options granted:

- Annual share-based compensation awards on January 3, 2022, including: (a) 325,000 stock options with an exercise price of $4.81 per share granted to executives and key personnel, upon one year anniversary, or vesting annually in equal installments over four years, (b) 75,000 performance-based stock options to a key personnel with an exercise price of $4.81, vesting upon the achievement of specified performance conditions, (c) 277,500 stock options with an exercise price of $4.81 per share granted to members of the Board of Directors, vesting upon one year anniversary, (d) 23,325 stock options with an exercise price of $4.81 per share granted to employees, vesting annually in equal installments over four years and (e) 15,000 stock options with an exercise price of $4.81 per share granted to a consultant, vesting upon one year anniversary.
- On June 10, 2022, the non-executive members of the Board of Directors were granted 150,000 stock options with an exercise price of $2.60 per share as a result of an agreed-upon reduction in director cash compensation. Options vest in one year from the grant date.

Compensation Expenses

We recognize all share-based payments to employees and our Board of Directors, as non-cash compensation expense, in research and development expenses or general and administrative expenses in the consolidated statement of operations, and these charges had no impact on the Company's reported cash flows. Stock-based compensation expense is calculated on the grant date fair values of such awards, and recognized each period based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Forfeitures are recorded as they occur.

For performance-based awards, the Company recognizes related stock-based compensation expenses based upon its determination of the potential likelihood of achievement of the specified performance conditions at each reporting date.

Total non-cash stock option compensation expense was allocated among the following expense categories:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
General and administrative	$ 441,279	$ 405,383	$ 1,219,827	$ 1,183,568
Research and development	58,640	51,826	188,383	140,832
Total	$ 499,919	$ 457,209	$ 1,408,210	$ 1,324,400

Note 6: Shareholders' Equity

Issuances of Common Stock

For the nine months ended September 30, 2022, there were 233,943 shares of the Company's common stock issued resulting from the exercise of stock options with a weighted average issue price of $1.72 per share. For the nine months ended September 30, 2021, there were 585,000 shares of the Company's common stock issued resulting from the exercise of stock options with a weighted average issue price of $1.68 per share.

Open Market Sale Agreement℠

On August 13, 2020, we entered into an Open Market Sale Agreement℠ with Jefferies LLC, or Jefferies, with respect to an at the market offering program under which we may offer and sell, from time to time at our sole discretion, shares of our common stock, par value $0.001 per share, having an aggregate offering price of up to $50.0 million through Jefferies as our sales agent or principal.

We have not and are not obligated to sell any shares under the sale agreement. Subject to the terms and conditions of the sale agreement, Jefferies will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable laws and regulations, to sell shares of our common stock from time to time based upon our instructions, including any price, time or size limits or other customary parameters or conditions we specify, subject to certain limitations. Under the sale agreement, Jefferies may sell shares of our common stock by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act of 1933, as amended.

We will pay Jefferies a commission equal to 3.0% of the gross proceeds from each sale of shares of our common stock sold through Jefferies under the sale agreement and will provide Jefferies with customary indemnification and contribution rights. In addition, we agreed to reimburse certain legal expenses and fees by Jefferies in connection with the offering up to a maximum of $50,000, in addition to certain ongoing disbursements of Jefferies' counsel, if required. The sale agreement will terminate upon the sale of all $50.0 million of shares under the sale agreement, unless earlier terminated by either party as permitted therein.

The issuance and sale, if any, of shares of our common stock by us under the sale agreement will be made pursuant to a registration statement on Form S-3 filed with the SEC on August 13, 2020, and declared effective by the SEC on August 25, 2020 and the accompanying Prospectus, as supplemented by a Prospectus Supplement. As of the date of this filing, there have been no sales made under the Open Market Sale Agreement℠.

Note 7: Subsequent Events

Management continues to monitor the COVID-19 pandemic and its development, and the possible effects on the Company's financial condition, liquidity, operations, vendors, industry, and workforce.

For purpose of disclosure in the consolidated financial statements, the Company has evaluated subsequent events through November 10, 2022, the date the consolidated financial statements were available to be issued. Except as discussed below, management is not aware of any material events that have occurred subsequent to the balance sheet date that would require adjustment to, or disclosure in the accompanying financial statements.

On October 27, 2022, the Company announced that it has received regulatory approval for the Company's Clinical Trial Application (CTA) from the South African Health Products Regulatory Authority (SAHPRA) to initiate a Phase 1 clinical trial using our DYAI-100 COVID-19 Receptor Binding Domain (RBD) booster vaccine.

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

The following discussion and analysis of financial condition and results of operations should be read in conjunction with the financial statements and the notes to those statements appearing in this Quarterly Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks, assumptions and uncertainties. Important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis include, but are not limited to, those set forth in "Item 1A. Risk Factors" in this Quarterly Report. All forward-looking statements included in this Quarterly Report are based on information available to us as of the time we file this Quarterly Report and, except as required by law, we undertake no obligation to update publicly or revise any forward-looking statements.

Overview

Description of Business

Dyadic International, Inc. ("Dyadic", "we", "us", "our", or the "Company") is a global biotechnology company based in Jupiter, Florida with operations in the United States and a satellite office in the Netherlands, and it utilizes a number of third-party consultants and research organizations to carry out the Company's research and development activities.

The Company's proprietary gene expression and protein production platforms are based on the highly productive and scalable fungus Thermothelomyces heterothallica (*formerly Myceliophthora thermophila)*. Our lead technology, C1-cell protein production platform, is based on an industrially proven microorganism (named C1). The Company has also developed the Dapibus™ filamentous fungal based microbial protein production platform to enable the rapid development and large-scale manufacture of low-cost proteins, metabolites and other biologic products for use in non-pharmaceutical applications, such as food, nutrition, and wellness.

On December 31, 2015, the Company sold its industrial technology business to Danisco USA ("Danisco"), the industrial biosciences business of DuPont (NYSE: DD) (the "DuPont Transaction"). As part of the DuPont Transaction, Dyadic retained co-exclusive rights to the C1-cell protein production platform for use in all human and animal pharmaceutical applications, and currently the Company has the exclusive ability to enter into sub-license agreements (subject to the terms of the license and to certain exceptions) for use in all human and animal pharmaceutical applications. Danisco retained certain rights to utilize the C1-cell protein production platform in pharmaceutical applications, including the development and production of pharmaceutical products, for which it will be required to make royalty payments to Dyadic upon commercialization. In certain circumstances, Dyadic may owe a royalty to either Danisco or certain licensors of Danisco, depending upon whether Dyadic elects to utilize certain patents either owned by Danisco or licensed in by Danisco.

The Company has primarily been focused on the animal and human biopharmaceutical industries, specifically in further improving and applying the proprietary C1-cell protein production platform into a safe and efficient protein production platform to help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs and other biological products at flexible commercial scales.

The Company's lead product, DYAI-100, also known as C1-SARS-CoV-2 RBD vaccine, is a novel receptor-binding domain (RBD) recombinant vaccine, highly expressed in C1-cell protein production platform in prevention of COVID-19. The Company anticipates starting a phase 1 clinical trial in South Africa in late 2022 to assess the safety, reactogenicity, and immunogenicity of the C1-SARS-CoV-2 RBD vaccine, administered as a booster, in healthy volunteers.

Recent Developments

- **DYAI-100, C1-SARS-CoV-2 RBD (Receptor Binding Domain) Booster Vaccine Candidate**
  - On October 27, 2022, the Company announced receipt of regulatory approval of its Clinical Trial Application (CTA) from the South African Health Products Regulatory Authority (SAHPRA) to initiate a Phase 1 clinical trial of the DYAI-100 COVID-19 Receptor Binding Domain (RBD) booster vaccine.
  - The Phase 1 randomized, double blind, placebo-controlled trial is designed to demonstrate clinical safety and preliminary efficacy of the DYAI-100, COVID-19 recombinant protein RBD booster vaccine candidate. Preparations are now underway to initiate the Phase 1 clinical trial to evaluate the safety and immunogenicity of the vaccine, with a plan to commence enrollment of subjects later this year in South Africa.
- **Multiple Ongoing Research Projects:**
  - **Third Party C1 Produced COVID-19 Antibody** – A non-human primate challenge study completed dosing of a C1 produced COVID-19 monoclonal antibody (mAb) that had previously demonstrated broad neutralization and protection against Omicron (BA.1 and BA.2) and the other earlier variants of concern in hamsters.
    - Preliminary results obtained from a challenge study with the SARS-CoV-2 Delta virus on non-human primates demonstrated potential high protection.
    - No SARS-CoV-2 RNA in throat and nasal swab samples were obtained in animals pre-treated with the C1 produced neutralizing monoclonal antibody (mAb), demonstrating potential for preventative effects.
    - Pre-clinical safety and efficacy data from animal studies, including hamsters and non-human primates, demonstrates C1 produced antigens and antibodies are as effective as those produced by reference platforms.
      - At the World Vaccine Congress Europe, Dr. Albert Osterhaus (University of Veterinary Medicine Hannover Germany), who has been collaborating with Dyadic for over 5 years, presented pre-clinical safety and efficacy data from animal studies, including hamsters and non-human primates, demonstrating C1 produced antigens and antibodies are as effective as those produced by reference platforms. Dr. Osterhaus's video presentation can be found on Dyadic's website under Media Center, Video Gallery.
      - CEO Mark Emalfarb presented data that demonstrated, in addition to C1-cells producing even higher levels of productivity to date across different classes and types of proteins for both animal and human health, innovative approaches and designs to C1 produced proteins which generated higher neutralizing antibody activity in pre-clinical animal studies with the potential to improve vaccines for influenza, COVID-19 and other disease areas.
  - **Influenza and COVID-19 Vaccines** – Additional preclinical studies are ongoing with C1 produced antigens for potential seasonal and/or pandemic influenza and/or an influenza / SARS-CoV-2 combined vaccine.
  - **Mono and Multi-Valent RBD-based Blended Vaccine** – Based on the RBD antigen cell lines that we have constructed to express Wuhan, Alpha, Beta, Gamma, Delta, and Omicron BA.1 and BA.5 CoV-2 variants, additional animal data is being generated through several preclinical trials using mono and multi-valent blends of C1 produced SARS-CoV-2 RBD variants of concern. Research is ongoing with various collaborators who are conducting animal trials on mono and multi-valent RBD-based blended COVID-19 vaccines for potential next generation pan-coronavirus vaccine candidates that may provide broader protection and longer lasting prevention against a wide variety of corona viruses than what is presently available in the market.
- **Influenza Neuraminidase (NA) Protein** – Dyadic developed a C1-cell line capable of achieving high titers of neuraminidase ("NA"). NA in combination with Hemagglutinin ("HA") is expected to play an important role in providing broader influenza vaccine-induced protection. Mice trials conducted by Oslo university for NA, like the previously reported HA produced from C1-cells, generated high neutralizing antibody levels. Additional animal trials are ongoing.
- **Scientific Updates**
  - Dyadic recently developed innovative cell engineering approaches which have resulted in the achievement of higher titers across different classes and types of proteins.
    - We have successfully expressed the following variants: Alpha, Beta, Gamma, Delta, and Omicron B.1.1.529 and BA.5 at 0.5-2.5 g/L levels, in addition to DYAI-100.
    - A nine-fold (9x) improvement in the expression yield for Nivolumab, a potential monoclonal antibody for oncology expressed from a C1-cell at 22.3 g/l in a seven-day fermentation.
    - A biologically active neuraminidase (NA) has been expressed at 0.8 g/L in 7 days for potential use in combination with Hemagglutinin (HA) to play an important role in providing broader influenza vaccine-induced protection. Mice trials conducted by Oslo University for NA, like the previously reported HA produced from C1-cells, generate high neutralizing antibody levels.
    - A non-human primate study completed dosing of a C1 produced COVID-19 monoclonal antibody (mAb) that has demonstrated broad neutralization and protection against Omicron (BA.1 & BA.2) and other earlier variants of concern in hamsters. Full data readout is anticipated later this year.
    - Potential next generation pan coronavirus vaccine candidates:
    - Successful production of Wuhan and Omicron Ferritin gRBD nanoparticle antigens.
    - The Wuhan S gRBD nanoparticle has been expressed at greater than 3 g/L in five days.
  - The new data presented by Dr. Albert Osterhaus came from three pre-clinical studies which demonstrated the potential positive preventative effects of two C1-cell produced proteins being as effective as those produced by reference platforms, including CHO (Chinese Hamster Ovary) cells.
- **Third Party Collaborations** – Several on-going fully funded research collaborations are on track as we continue to optimize our C1-cell protein production platform and increase productivity, including collaborations with Janssen, NIIMBL, Jiangsu Hengrui, Epygen Biotech, and other partners.
- **Animal Health**
  - The Company has successfully expressed a recombinant livestock antigen at titers up to 10 g/L in 7 days.
  - The Company expanded its research projects in animal health for the development of animal vaccines for livestock.
  - In October, the Company commenced a new proof of concept project with a top animal health company for the treatment of a targeted disease.
  - The Company has initiated two (2) additional recombinant protein projects to support vaccine research and development.
- **Alternative Proteins**
  - Dyadic has launched its *Dapibus*™ platform, a filamentous fungal based microbial gene expression and protein production platform, which is further designed and customized to enable the rapid development and large-scale manufacture of low-cost enzymes, proteins, metabolites, and other biologic products for use in non-pharmaceutical applications such as food, nutrition, and wellness.
  - The Company initiated an animal free recombinant serum albumin and other projects related to cell culture media to support the *Dapibus*™ platform, which is being developed, among other applications, to meet the growing demand and unmet needs of alternative proteins in emerging market such as cultured meat.

Impact of COVID-19

The outbreak of COVID-19 has led to adverse impacts on the U.S. and global economies and created uncertainty regarding the potential impact to the Company's employees, operations, and research projects.

The extent to which the COVID-19 pandemic will directly or indirectly impact our business will depend on future developments that are highly uncertain, including as a result of new information that may emerge concerning the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its variants and the actions taken and the level of success to contain or treat the SARS-CoV-2 virus and its variants, the economic impact on local, regional, national and international business partners and markets, delays or disruptions in our on-going research projects, and unavailability of the employees of the Company or third-party contract research organizations with whom we conduct business, due to illness or quarantines, all of which remain uncertain at this time. Management is actively monitoring this situation and the possible effects on its financial condition, liquidity, operations, vendors, industry, and workforce. Even after the COVID-19 pandemic has subsided, the Company may continue to experience adverse impacts to its business because of economic recession or depression that has occurred or may occur in the future. Currently, these have not materially impacted our development timelines and we continue to adapt to the current environment to minimize the effect to our business. However, given the daily evolution of COVID-19 and the ongoing response to curb its spread (including government travel and meeting restrictions), we may experience more pronounced disruptions in our operations and impact to our results of operations, financial condition, or liquidity in the future.

Russian-Ukrainian war

Our business is not directly impacted by the war as we do not operate in either Russia or the Ukraine. However, the war might potentially amplify the disruptive impact of COVID-19.

Climate Change

We believe that neither climate change, nor governmental regulations related to climate change, have had, or are expected to have, a material effect on our operations.

Open Market Sale Agreement℠

On August 13, 2020, we entered into an Open Market Sale Agreement℠ with Jefferies LLC, or Jefferies, with respect to an at the market offering program under which we may offer and sell, from time to time at our sole discretion, shares of our common stock, par value $0.001 per share, having an aggregate offering price of up to $50.0 million through Jefferies as our sales agent or principal.

We have not and are not obligated to sell any shares under the sale agreement. Subject to the terms and conditions of the sale agreement, Jefferies will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable laws and regulations, to sell shares of our common stock from time to time based upon our instructions, including any price, time or size limits or other customary parameters or conditions we specify, subject to certain limitations. Under the sale agreement, Jefferies may sell shares of our common stock by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act of 1933, as amended.

We will pay Jefferies a commission equal to 3.0% of the gross proceeds from each sale of shares of our common stock sold through Jefferies under the sale agreement and will provide Jefferies with customary indemnification and contribution rights. In addition, we agreed to reimburse certain legal expenses and fees by Jefferies in connection with the offering up to a maximum of $50,000, in addition to certain ongoing disbursements of Jefferies' counsel, if required. The sale agreement will terminate upon the sale of all $50.0 million of shares under the sale agreement, unless earlier terminated by either party as permitted therein.

The issuance and sale, if any, of shares of our common stock by us under the sale agreement will be made pursuant to a registration statement on Form S-3 filed with the SEC on August 13, 2020 and declared effective by the SEC on August 25, 2020 and the accompanying Prospectus, as supplemented by a Prospectus Supplement. As of the date of this filing, there have been no sales made under the Open Market Sale Agreement℠.

Critical Accounting Policies, Estimates, and Judgments

The preparation of these consolidated financial statements in accordance with GAAP requires management to make estimates and judgments that affect the reported amount of assets and liabilities and related disclosure of contingent assets and liabilities at the date of our consolidated financial statements and the reported amounts of revenues and expenses during the applicable period. Actual results may differ from these estimates under different assumptions or conditions. Such differences could be material to the consolidated financial statements.

We define critical accounting policies as those that are reflective of significant judgments and uncertainties and which may potentially result in materially different results under different assumptions and conditions. In applying these critical accounting policies, our management uses its judgment to determine the appropriate assumptions to be used in making certain estimates. These estimates are subject to an inherent degree of uncertainty. Our critical accounting policies include the following:

Revenue Recognition

The Company has no products approved for sale at this point. All of our revenue to date has been research revenue from third-party collaborations and government grants, as well as revenue from sublicensing agreements and collaborative arrangements, which may include upfront payments, options to obtain a license, payment for research and development services, milestone payments and royalties, in the form of cash or non-cash considerations (e.g., minority equity interest).

Revenue related to research collaborations and agreements: The Company typically performs research and development services as specified in each respective agreement on a best efforts basis, and recognizes revenue from research funding under collaboration agreements in accordance with the 5-step process outlined in ASC Topic 606 ("Topic 606"): (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We recognize revenue when we satisfy a performance obligation by transferring control of the service to a customer in an amount that reflects the consideration that we expect to receive. Depending on how the performance obligation under our license and collaboration agreements is satisfied, we elected to recognize the revenue either at a point in time or over time by using the input method under Topic 606 to measure the progress toward complete satisfaction of a performance obligation.

Under the input method, revenue will be recognized based on the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation. The Company believes that the cost-based input method is the best measure of progress to reflect how the Company transfers its performance obligation to a customer. In applying the cost-based input method of revenue recognition, the Company uses actual costs incurred relative to budgeted costs to fulfill the performance obligation. These costs consist primarily of full-time equivalent effort and third-party contract costs. Revenue will be recognized based on actual costs incurred as a percentage of total budgeted costs as the Company completes its performance obligations.

A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

Revenue related to grants: The Company may receive grants from governments, agencies, and other private and not-for-profit organizations. These grants are intended to be used to partially or fully fund the Company's research collaborations, including opportunities arising in connection with COVID-19 that the Company is pursuing with certain collaborators. However, most, if not all, of such potential grant revenues, if received, is expected to be earmarked for third parties to advance the research required, including preclinical and clinical trials for SARS-CoV-2 vaccines and/or antibodies candidates.

Revenue related to sublicensing agreements: If the sublicense to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue allocated to the license when technology is transferred to the customer and the customer is able to use and benefit from the license.

Customer options: If the sublicensing agreement includes customer options to purchase additional goods or services, the Company will evaluate if such options are considered material rights to be deemed as separate performance obligations at the inception of each arrangement.

Milestone payments: At the inception of each arrangement that includes development, commercialization, and regulatory milestone payments, the Company evaluates whether the achievement of the milestones is considered probable and estimates the amount to be included in the transaction price. If the milestone payment is in exchange for a sublicense and is based on the sublicensee's subsequent sale of product, the Company recognizes milestone payment by applying the accounting guidance for royalties. To date, the Company has not recognized any milestone payment revenue resulting from any of its sublicensing arrangements.

Royalties: With respect to licenses deemed to be the predominant item to which the sales-based royalties relate, including milestone payments based on the level of sales, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its sublicensing arrangements.

We invoice customers based on our contractual arrangements with each customer, which may not be consistent with the period that revenues are recognized. When there is a timing difference between when we invoice customers and when revenues are recognized, we record either a contract asset (unbilled accounts receivable) or a contract liability (deferred research and development obligations), as appropriate. If upfront fees or considerations related to sublicensing agreement are received prior to the technology transfer, the Company will record the amount received as deferred revenue from licensing agreement.

We are not required to disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

The Company adopted a practical expedient to expense sales commissions when incurred because the amortization period would be one year or less.

Accrued Research and Development Expenses

In order to properly record services that have been rendered but not yet billed to the Company, we review open contracts and purchase orders, communicate with our personnel and we estimate the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly or quarterly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and adjust if necessary. Examples of accrued research and development expenses include amounts owed to contract research organizations, to service providers in connection with research and development activities.

Stock-Based Compensation

We have granted stock options to employees, directors and consultants. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model. The Black-Scholes model considers volatility in the price of our stock, the risk-free interest rate, the estimated life of the option, the closing market price of our stock and the exercise price. For purposes of the calculation, we assumed that no dividends would be paid during the life of the options. We also used the weighted-average vesting period and contractual term of the option as the best estimate of the expected life of a new option, except for the options granted to the CEO (i.e., 5 or 10 years) and certain contractors (i.e., 1 or 3 years). The expected stock price volatility was calculated based on the Company's own volatility since the DuPont Transaction. The Company reviews its volatility assumption on an annual basis and has used the Company's historical volatilities since 2016, as the DuPont Transaction resulted in significant changes in the Company's business and capital structure.

The estimates utilized in the Black-Scholes calculation involve inherent uncertainties and the application of management judgment. These estimates are neither predictive nor indicative of the future performance of our stock. As a result, if other assumptions had been used, our recorded share-based compensation expense could have been materially different from that reported. In addition, because some of the performance-based options issued to employees, consultants and other third-parties vest upon the achievement of certain milestones, the total ultimate expense of share-based compensation is uncertain.

Accounting for Income Taxes

The Company accounts for income taxes under the asset and liability method in accordance with ASC Topic 740 ("Topic 740"), "Income Taxes". Under this method, income tax expense/(benefit) is recognized for: (i) taxes payable or refundable for the current year and (ii) deferred tax consequences of temporary differences resulting from matters that have been recognized in an entity's financial statements or tax returns. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the results of operations in the period that includes the enactment date. A valuation allowance is provided to reduce the deferred tax assets reported if based on the weight of the available positive and negative evidence, it is more likely than not some portion or all the deferred tax assets will not be realized.

In determining taxable income for the Company's consolidated financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. This process requires the Company to make certain estimates of our actual current tax exposure and assessment of temporary differences between the tax and financial statement recognition of revenue and expense. In evaluating the Company's ability to recover its deferred tax assets, the Company must consider all available positive and negative evidence including its past operating results, the existence of cumulative losses in the most recent years and its forecast of future taxable income. Significant management judgment is required in determining our provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets.

The Company is required to evaluate the provisions of Topic 740 related to the accounting for uncertainty in income taxes recognized in a company's financial statements. Topic 740 prescribes a comprehensive model for how a company should recognize, present, and disclose uncertain positions that the company has taken or expects to take in its tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. Differences between tax positions taken or expected to be taken in a tax return and the net benefit recognized and measured pursuant to the interpretation are referred to as "unrecognized benefits." A liability should be recognized (or amount of net operating loss carry forward or amount of tax refundable is reduced) for unrecognized tax benefit because it represents a company's potential future obligation to the taxing authority for a tax position that was not recognized because of applying the provision of Topic 740.

Non-Marketable Investments

The Company also holds investments in non-marketable equity securities of privately held companies, which usually do not have a readily determinable fair value. Our policy is to measure these investments at cost less impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. Such observable price changes may include instances where the investee issues equity securities to new investors, thus creating a new indicator of fair value, as an example. On a quarterly basis, we perform a qualitative assessment considering impairment indicators to evaluate whether these investments are impaired and also monitor for any observable price changes. If indicators of impairment exist, we will prepare a quantitative assessment of the fair value of our equity investments, which may include using both the market and income approaches which require judgment and the use of estimates, including discount rates, investee revenues and costs, and available comparable market data of private and public companies, among others. Valuations of such privately held companies are inherently complex and uncertain due to the lack of liquid market for the company's securities. In addition, such investments are inherently risky in that such companies are typically at an early stage of development, may have no or limited revenues, may not be or may never become profitable, may not be able to secure additional funding or their technologies, services or products may not be successfully developed or introduced into the market.

The Company bases its fair value estimates on assumptions it believes to be reasonable, but which are unpredictable and inherently uncertain. Actual future results may differ from those estimates.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Recent Accounting Pronouncements

See Note 1 to the Consolidated Financial Statements for information about recent accounting pronouncements.

Results of Operations

Three and Nine Months Ended September 30, 2022 Compared to the Same Periods in 2021

Revenue and Cost of Research and Development Revenue

The following table summarizes the Company's revenue and cost of research and development revenue for the three and nine months ended September 30, 2022 and 2021:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Research and development revenue	$ 835,480	$ 692,929	$ 1,983,636	$ 2,090,541
License revenue	44,117	—	202,941	—
Cost of research and development revenue	602,847	392,544	1,418,702	1,612,810

The increase in research and development revenue and cost of research and development revenue for the three months ended September 30, 2022, was due to higher revenue and cost of research and development revenue on individual on-going research collaborations compared to the same period a year ago. The decrease in research and development revenue and cost of research and development revenue for the nine months ended September 30, 2022, was due to the timing difference of on-going research collaborations compared to the same period a year ago. The license revenue recorded in the three and nine months ended September 30, 2022 was in connection with the Phibro/Abic and Janssen license agreements.

Research and Development Expenses

Research and development costs are expensed as incurred and primarily include salary and benefits of research personnel, third-party contract research organization services and supply costs.

Research and development expenses for the three months ended September 30, 2022, decreased to approximately $744,000 compared to $1,902,000 for the same period a year ago. Research and development expenses for the nine months ended September 30, 2022, decreased to approximately $3,917,000 compared to $5,919,000 for the same period a year ago. The decrease primarily reflected the winding down of activities of contract research organization and pharmaceutical quality and regulatory consultants to manage and support the pre-clinical and clinical development as well as a decrease in cGMP manufacturing costs as the Company moves towards its anticipated Phase 1 clinical trial of DYAI-100 COVID-19 vaccine candidate.

General and Administrative Expenses

General and administrative expenses for the three months ended September 30, 2022, decreased by 18.3% to approximately $1,383,000 compared to $1,693,000 for the same period a year ago. The decrease principally reflected decreases in legal expenses of $172,000, incentives of $165,000, and insurance expenses by $26,000 offset by increases in business development and investor relations expenses of $12,000 and other increases of $41,000.

General and administrative expenses for the nine months ended September 30, 2022, decreased by 4.8% to approximately $4,753,000 compared to $4,994,000 for the same period a year ago. The decrease principally reflected decreases in insurance expenses of $261,000, incentives of $171,000, offset by increases in insurance expenses of $91,000, and other increases of $100,000.

Interest Income

Interest income for the three months ended September 30, 2022, was approximately $54,000 compared to $3,000 for the same period a year ago. Interest income for the nine months ended September 30, 2022, was approximately $87,000 compared to $50,000 for the same period a year ago. The increase was primarily due to the higher balance of held-to-maturity securities and the increase in interest rate.

Other Income

There was no other income for the three months ended September 30, 2022 and 2021. Other income for the nine months ended September 30, 2022, was $250,000 compared to $0 for the same period a year ago. The other income recognized in the first quarter of 2022 was related to a settlement payment we received from the termination of term sheet of a proposed license and collaboration.

Net Loss

Net loss for the three months ended September 30, 2022, was approximately $1,809,000 compared to $1,715,000 for the same period a year ago.

Net loss for the nine months ended September 30, 2022, was approximately $7,589,000 compared to $8,856,000 for the same period a year ago.

Liquidity and Capital Resources

Our primary source of cash has been the cash received from the DuPont Transaction in December 2015, interest income received from investment grade securities, revenues from our research collaboration agreements and license agreements, and funding from the exercise of employee stock options. In addition, in August 2021, the Company received approximately $1.6 million from the BDI Sale, In December 2021, the Company received an upfront payment of $0.5 million for a non-exclusive license from Janssen.

Our ability to achieve profitability depends on many factors, including our scientific results and our ability to continue to obtain funded research and development collaborations from industry and government programs, as well as sub-license agreements. We may continue to incur substantial operating losses even if we begin to generate revenues from research and development and licensing. Our primary future cash needs are expected to be for general operating activities, including our business development and research expenses, Phase 1 clinical trial, as well as legal and administrative costs as an SEC reporting and NASDAQ listed company.

On August 13, 2020, we entered an Open Market Sale Agreement℠ with Jefferies LLC, or Jefferies, with respect to an at the market offering program under which we may offer and sell, from time to time at our sole discretion, shares of our common stock at an aggregate offering price of up to $50.0 million through Jefferies as our sales agent or principal. This program adds to our financial flexibility to pursue additional opportunities that leverage the broad application potential of C1. However, as of the date of this filing, there have been no sales made under the Open Market Sale Agreement℠.

We rely on our existing cash and cash equivalents, investments in debt securities, and operating cash flow to provide the working capital needs for our operations. We believe that our existing cash position and investments in investment grade securities will be adequate to meet our operational, business, and other liquidity requirements for at least the next twelve (12) months. However, in the event our financing needs for the foreseeable future are not able to be met by our existing cash, cash equivalents and investments, we would seek to raise funds through public or private equity offerings, and through other means to meet our financing requirements. Currently, the Company is self-funding the development and cGMP manufacturing costs of its proprietary COVID-19 vaccine candidate, DYAI-100 towards a Phase 1 clinical trial to demonstrate the safety in humans of a protein produced from the C1-cell protein production platform.

As of September 30, 2022, cash and cash equivalents were approximately $6.7 million compared to $15.7 million as of December 31, 2021. The carrying value of investment grade securities, including accrued interest as of September 30, 2022, was approximately $7.5 million compared to $4.6 million as of December 31, 2021.

Net cash used in operating activities for the nine months ended September 30, 2022, of approximately $6.4 million was principally attributable to a net loss of approximately $7.6 million, partially offset by share-based compensation expenses of approximately $1.4 million, and changes in operating assets and liabilities of approximately $0.3 million.

Net cash used in operating activities for the nine months ended September 30, 2021, of approximately $8.6million was principally attributable to a net loss of approximately $8.8 million, partially offset by share-based compensation expenses of approximately $1.3 million, amortization of held-to-maturity securities of approximately $0.3 million, and changes in operating assets and liabilities of approximately $0.2 million.

Net cash used in investing activities for the nine months ended September 30, 2022, was approximately $3.0 million compared to $0.7 million for the nine months ended September 30, 2021. Cash flows from investing activities during the nine months ended September 30, 2022 and 2021 were primarily related to proceeds from maturities and purchases of investment grade debt securities.

Net cash provided by financing activities for the nine months ended September 30, 2022, was approximately $402,000 compared to $986,000 for the nine months ended September 30, 2021. Cash flows from financing activities during the nine months ended September 30, 2022 and 2021 were primarily related to proceeds from exercise of stock options.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information required under this item.

Item 4. Controls and procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms. Based on the evaluation of our disclosure controls and procedures as of the end of the period covered by this report, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective.

Changes in Internal Controls Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the nine months ended September 30, 2022, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. We have not experienced any material impact to our internal controls over financial reporting due to the COVID-19 pandemic. We are continually monitoring and assessing the COVID-19 situation on our internal controls to minimize the impact on their design and operating effectiveness.

Inherent Limitation on Effectiveness of Controls

A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II

Item 1. Legal Proceedings

We are not currently involved in any litigation that we believe could have a materially adverse effect in our financial condition or results of operations. From time to time, we may become involved in various lawsuits and legal proceedings which arise in the ordinary course of business. Litigation is subject to inherent uncertainties, and an adverse result in these or other matters may arise from time to time that may harm our business.

Item 1A. Risk Factors

There have been no changes to our risk factors from those disclosed in our Form 10-K for the 2021 fiscal year filed on March 29, 2022.

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

None.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

The following Exhibits are filed as part of this report pursuant to Item 601 of Regulation S-K:

		Incorporated by Reference			
Exhibit No.	Description of Exhibit	Form	Original No.	Date Filed	Filed Herewith
31.1	Certification of Principal Executive Officer of Dyadic Pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				x
31.2	Certification of Principal Financial Officer of Dyadic Pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				x
32.1	Certification of Principal Executive Officer of Dyadic Pursuant to 18 U.S.C Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				x
32.2	Certification of Principal Financial Officer of Dyadic Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				x

Exhibit No.	Description
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL and contained in Exhibit 101)

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.

DYADIC INTERNATIONAL, INC.

November 10, 2022 By: /s/ Mark A. Emalfarb
Mark A. Emalfarb
President and Chief Executive Officer
(Principal Executive Officer)

November 10, 2022 By: /s/ Ping W. Rawson
Ping W. Rawson
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
and Securities and Exchange Commission Release 34-46427

I, Mark A. Emalfarb, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Dyadic International, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we 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 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 10, 2022
By: /s/ Mark A. Emalfarb

Name: Mark A. Emalfarb
Title: Chief Executive Officer

Exhibit 31.2

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
and Securities and Exchange Commission Release 34-46427

I, Ping W. Rawson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Dyadic International, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we 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 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 10, 2022
By: /s/ Ping W. Rawson

Name: Ping W. Rawson
Title: Chief Financial 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 Dyadic International, Inc. (the "Company") on Form 10-Q for the quarter ended September 30, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark A. Emalfarb, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 10, 2022
By: /s/ Mark A. Emalfarb

Name: Mark A. Emalfarb
Title: Chief Executive Officer

Exhibit 32.2

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 Dyadic International, Inc. (the "Company") on Form 10-Q for the quarter ended September 30, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ping W. Rawson, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 10, 2022
By: /s/ Ping W. Rawson

Name: Ping W. Rawson
Title: Chief Financial Officer