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DELTA REPORT

10-Q

HCWB - HCW BIOLOGICS INC.

10-Q - MARCH 31, 2024 COMPARED TO 10-Q - SEPTEMBER 30, 2023

The following comparison report has been automatically generated

TOTAL DELTAS	2246
CHANGES	158
DELETIONS	586
ADDITIONS	1502

REFINITIV

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, March 31, 2023 2024

OR

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

For the transition period from to

Commission File Number: 001-40591

HCW Biologics Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**82-5024477**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
2929 N. Commerce Parkway Miramar, Florida	**33025**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (954) 842–2024

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	**HCWB**	**The Nasdaq Stock Market LLC**

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

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

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

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

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

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

As of November 13, 2023 May 13, 2024, the registrant had 35,974,570 37,823,394 shares of common stock, $0.0001 par value per share, outstanding.

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

HCW Biologics Inc.

Condensed Balance Sheets

	December 31, 2022	September 30, 2023 Unaudited	December 31, 2023	March 31, 2024 Unaudited
ASSETS				
Current assets:				
Cash and cash equivalents	$ 22,326,356	$ 11,220,793	$ 3,595,101	$ 4,084,076
Short-term investments	9,735,930	—		
Accounts receivable, net	417,695	710,078	1,535,757	903,884
Secured note receivable			—	250,000
Prepaid expenses	1,394,923	1,742,341	1,042,413	783,423
Other current assets	196,015	174,881	230,916	187,267
Total current assets	34,070,919	13,848,093	6,404,187	6,208,650
Investments	1,599,751	1,599,751	1,599,751	1,599,751
Property, plant and equipment, net	10,804,610	14,780,872	20,453,184	22,590,779
Deposit for interest reserve	—	5,250,000		
Other assets	333,875	137,626	56,538	28,476
Total assets	$ 46,809,155	$ 35,616,342	$ 28,513,660	$ 30,427,656
LIABILITIES AND STOCKHOLDERS' EQUITY				
Liabilities				
Current liabilities:				
Accounts payable	$ 1,226,156	$ 3,153,834	$ 6,167,223	$ 10,493,416
Accrued liabilities and other current liabilities	1,730,325	2,262,839	2,580,402	2,919,190
Total current liabilities	2,956,481	5,416,673	8,747,625	13,412,606
Debt, net	6,409,893	6,332,736	6,304,318	8,274,449
Other liabilities	14,275	—		
Total liabilities	9,380,649	11,749,409	15,051,943	21,687,055
Commitments and contingencies (Note 8)				
Stockholders' equity:				
Common stock:				
Common, $0.0001 par value; 250,000,000 shares authorized and 35,876,440 shares issued at December 31, 2022; 250,000,000 shares authorized and 35,927,321 shares issued at September 30, 2023	3,588	3,593		
Common, $0.0001 par value; 250,000,000 shares authorized and 36,025,104 shares issued at December 31, 2023; 250,000,000 shares authorized and 37,823,394 shares issued at March 31, 2024			3,603	3,782
Additional paid-in capital	82,962,964	83,715,133	83,990,437	86,737,203
Accumulated deficit	(45,538,046)	(59,851,793)	(70,532,323)	(78,000,384)
Total stockholders' equity	37,428,506	23,866,933	13,461,717	8,740,601
Total liabilities and stockholders' equity	$ 46,809,155	$ 35,616,342	$ 28,513,660	$ 30,427,656

See accompanying notes to the unaudited condensed interim financial statements.

HCW Biologics Inc.
Condensed Statements of Operations
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,		Three Months Ended March 31,	
	2022	2023	2022	2023	2023	2024
Revenues:						
Revenues	$ 1,809,025	$ 853,102	$ 5,380,570	$ 1,517,792	$ 41,883	$ 1,126,712
Cost of revenues	(1,447,220)	(678,325)	(3,062,496)	(1,210,077)	(29,350)	(511,965)
Net revenues	361,805	174,777	2,318,074	307,715	12,533	614,747
Operating expenses:						
Research and development	2,648,794	1,667,442	6,408,353	5,539,919	2,255,813	2,123,284
General and administrative	1,732,666	3,585,215	5,321,262	9,716,765	3,117,290	5,985,126
Total operating expenses	4,381,460	5,252,657	11,729,615	15,256,684	5,373,103	8,108,410
Loss from operations	(4,019,655)	(5,077,880)	(9,411,541)	(14,948,969)	(5,360,570)	(7,493,663)
Interest expense	(32,184)	(95,514)	(32,184)	(284,465)	(93,438)	—
Other (expense) income, net	137,645	234,753	(38,237)	919,688	383,322	25,602
Net loss	$ (3,914,194)	$ (4,938,641)	$ (9,481,962)	$ (14,313,746)	$ (5,070,686)	$ (7,468,061)
Net loss per share, basic and diluted	$ (0.11)	$ (0.14)	$ (0.26)	$ (0.40)	$ (0.14)	$ (0.20)
Weighted average shares outstanding, basic and diluted	35,835,135	35,926,921	35,809,216	35,907,123	35,883,779	37,223,588

See accompanying notes to the unaudited condensed interim financial statements.

HCW Biologics Inc.

Condensed Statements of Changes in Stockholders' Equity

For the Nine Three Months Ended September 30, 2022 March 31, 2023 and September 30, 2023 2024

(Unaudited)

	Stockholders' Equity					Stockholders' Equity				
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, December 31, 2021	35,768,264	$ 3,57	$ 81,827,006	$ (30,637,343)	$ 51,193,240					
Balance, December 31, 2022						35,876,440	$ 3,588	$ 82,962,964	$ (45,538,046)	$ 37,428,506
Issuance of Common Stock upon exercise of stock options	11,225	1	2,272	—	2,273	10,195	1	1,900	—	1,901
Stock-based compensation	—	—	260,348	—	260,348	—	—	259,206	—	259,206
Net loss	—	—	—	(2,057,207)	(2,057,207)	—	—	—	(5,070,686)	(5,070,686)
Balance, March 31, 2022	**35,779,489**	**$ 3,57**	**$ 82,089,626**	**$ (32,694,550)**	**$ 49,398,654**					
Balance, March 31, 2023						**35,886,635**	**$ 3,589**	**$ 82,964,864**	**$ (50,608,732)**	**$ 32,359,721**
Issuance of Common Stock upon exercise of stock options	44,434	4	5,996	—	6,000					
Stock-based compensation	—	—	271,335	—	271,335					
Net loss	—	—	—	(3,510,561)	(3,510,561)					

	35,8	3,	82,3	(36,2	46,1
	23,9	58	66,9	05,1	65,4
Balance, June 30, 2022	**23**	**$ 2**	**$ 57**	**$ 11)**	**$ 28**
Issuance of Common					
Stock upon exercise of	12,2		1,67		1,67
stock options	12	2	2	—	4
Stock-based			302,		302,
compensation	—	—	320	—	320
				(3,91	(3,91
Net loss				4,19	4,19
	—	—	—	4)	4)
	35,8	**3,**	**82,6**	**(40,1**	**42,5**
Balance, September 30,	**36,1**	**58**	**70,9**	**19,3**	**55,2**
2022	**35**	**$ 4**	**$ 49**	**$ 05)**	**$ 28**

Balance, March 31, 2023	**35,886,635**	**$ 3,589**	**$ 83,224,070**	**$ (50,608,732)**	**$ 32,618,927**

	Stockholders' Equity				
	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balance, December 31, 2022	35,876,405	$ 3,589	$ 83,224,070	$ (50,608,732)	$ 32,618,927
Balance, December 31, 2023	36,025,104	$ 3,603	$ 83,990,437	$ (70,532,323)	$ 13,461,717
Issuance of Common Stock upon exercise of stock options	12,572	1	2,254	—	2,255
Issuance of Common Stock upon equity subscription	1,785,718	178	2,499,827		2,500,005
Stock-based compensation	—	—	244,685	—	244,685
Net loss	—	—	—	(7,468,061)	(7,468,061)
Balance, March 31, 2023	**37,823,395**	**$ 3,782**	**$ 86,737,203**	**$ (77,999,384)**	**$ 8,741,601**

Issuance of Common Stock upon exercise of stock options	40,086	4	7,708	—	7,712
Stock-based compensation	—	—	263,423	—	263,423
Net loss	—	—	—	(4,304,420)	(4,304,420)
Balance, June 30, 2023	**35,926,721**	**3,593**	**83,495,201**	**(54,913,152)**	**28,585,642**
Issuance of Common Stock upon exercise of stock options	600	—	84	—	84
Stock-based compensation	—	—	219,848	—	219,848
Net loss	—	—	—	(4,938,641)	(4,938,641)
Balance, September 30, 2023	**35,927,321**	**$ 3,593**	**$ 83,715,133**	**$ (59,851,793)**	**$ 23,866,933**
Balance, March 31, 2024	**37,823,394**	**$ 3,782**	**$ 86,737,203**	**$ (78,000,384)**	**$ 8,740,601**

See accompanying notes to the unaudited condensed interim financial statements.

HCW Biologics Inc.
Condensed Statements of Cash Flows
(Unaudited)

	Nine Months Ended September 30,	
	2022	**2023**
Cash flows from operating activities:		
Net loss	$ (9,481,962)	$ (14,313,746)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	456,696	860,634
Stock-based compensation	834,003	742,477
Unrealized loss (gain) on investments, net	253,550	(248,445)
Realized (gain) on investments	—	(15,625)
Reduction in the carrying amount of right-of-use asset	1,463	(1,045)

Changes in operating assets and liabilities:		
Accounts receivable	(222,555)	(292,383)
Deposit for interest reserve	—	(5,250,000)
Prepaid expenses and other assets	1,854,155	(251,008)
Accounts payable and other liabilities	(202,979)	392,802
Operating lease liability	(89,110)	(242,990)
Net cash used in operating activities	(6,596,739)	(18,619,329)
Cash flows from investing activities:		
Purchases of property and equipment	(10,206,441)	(2,486,950)
Proceeds for sale or maturities of short-term investments	24,983,520	10,000,000
Net cash provided by investing activities	14,777,079	7,513,050
Cash flows from financing activities:		
Proceeds from issuance of common stock	9,947	9,697
Proceeds from issuance of debt, net	6,448,166	—
Offering costs	(144,870)	—
Debt repayment	—	(8,981)
Net cash provided by financing activities	6,313,243	716
Net increase (decrease) in cash and cash equivalents	14,493,583	(11,105,563)
Cash and cash equivalents at the beginning of the period	11,730,677	22,326,356
Cash and cash equivalents at the end of the period	$ 26,224,260	$ 11,220,793
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ —	$ 284,465
Noncash operating, investing and financing activities:		
Operating lease liabilities arising from obtaining right-of-use assets	$ 231,196	$ —
Capital expenditures accrued, but not yet paid	$ —	$ 2,095,724

	Three Months Ended March 31,	
	2023	2024
Cash flows from operating activities:		
Net loss	$ (5,070,686)	$ (7,468,061)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	298,847	243,501
Stock-based compensation	259,206	244,685
Unrealized loss (gain) on investments, net	(112,500)	—
Changes in the carrying amount of right-of-use asset	209	(418)
Changes in operating assets and liabilities:		
Accounts receivable	164,967	631,873
Prepaid expenses and other assets	182,294	302,640
Accounts payable and other liabilities	718,675	2,498,451
Operating lease liability	(79,225)	(56,541)
Net cash used in operating activities	(3,638,213)	(3,603,870)
Cash flows from investing activities:		
Purchases of property and equipment	(300,385)	(129,709)
Net cash used in investing activities	(300,385)	(129,709)
Cash flows from financing activities:		
Proceeds from issuance of common stock	1,901	2,502,260

Proceeds from issuance of debt, net	—	1,750,000
Debt repayment	—	(29,706)
Net cash provided by financing activities	1,901	4,222,554
Net (decrease) increase in cash and cash equivalents	(3,936,697)	488,975
Cash and cash equivalents at the beginning of the period	22,326,356	3,595,101
Cash and cash equivalents at the end of the period	$ 18,389,659	$ 4,084,076
Supplemental disclosure of cash flow information:		
Cash paid for interest, net of amounts capitalized	$ 93,438	$ —
Noncash operating, investing and financing activities:		
Capital expenditures accrued, but not yet paid	$ —	$ 2,192,255

See accompanying notes to the unaudited condensed interim financial statements.

HCW Biologics Inc.
Notes to Condensed Interim Financial Statements
(Unaudited)

1. Organization and Summary of Significant Accounting Policies

Organization

HCW Biologics Inc. (the “Company”) is a clinical stage biopharmaceutical company focused on discovering and developing novel immunotherapies to lengthen healthspan by disrupting the link between chronic, low-grade inflammation and age-related diseases. The Company believes age-related low-grade chronic inflammation, or “inflammaging,” is a significant contributing factor to several chronic diseases and conditions, such as cancer, cardiovascular disease, diabetes, neurodegenerative diseases, and autoimmune diseases. The Company is located in Miramar, Florida and was incorporated in the state of Delaware in April 2018.

Liquidity and Going Concern

In accordance with ASC 205-40, Presentation of Financial Statements – Going Concern (“Topic 205-40”), we are required to evaluate whether there are conditions and events, considered in the aggregate that raise substantial doubt about our ability to continue as a going concern for at least 12 months from the issuance date of the Company’s condensed interim financial statements. This evaluation does not take into consideration the potential mitigating effect of management’s plans that have not been fully implemented or are not within control of the Company as of the date the financial statements are issued. When substantial doubt exists under this methodology, management evaluates whether the mitigating effect of its plans sufficiently alleviates substantial doubt about the Company’s ability to continue as a going concern. The mitigating effect of management’s plans, however, is only considered if both (1) it is probable that the plans will be effectively implemented within one year after the date that the financial statements are issued, and (2) it is probable that the plans, when implemented, will mitigate the relevant conditions or events that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that the financial statements are issued.

As of September 30, 2023 March 31, 2024, the Company had not generated any revenue from commercial product sales of its internally-developed immunotherapeutic products for the treatment of cancer and other age-related diseases. In the course of its development activities, the Company has sustained operating losses and expects to continue to incur operating losses for the foreseeable future. Since inception substantially all the Company’s activities have consisted of research, development, establishing large-scale cGMP production for clinical trials, and raising capital. The Company's total revenues to date have been generated solely from the Wugen License and its manufacturing and supply arrangement with Wugen. In the three and nine months ended September 30, 2023, the Company recognized revenues from manufacturing and supply of materials for Wugen of $853,102 and $1.5 million, respectively.

As of September 30, 2023, the Company had cash and cash equivalents of $11.2 million and a deposit for interest reserve of $5.3 million.Since inception to September 30, 2023 March 31, 2024, the Company incurred cumulative net losses of $57.1 75.5 million. As of March 31, 2024, the Company had $4.1 million in cash and cash equivalents. Management expects to incur additional losses in the future to conduct product research and development and recognizes the need to raise additional capital to fully implement its business plan. In November 2023, As a result of these conditions, substantial doubt about the Company's ability to continue as a going concern was raised.

To date, the Company expects has funded operations primarily through the sale of stock, issuance of senior secured notes and revenues generated from the Company's exclusive worldwide license with Wugen, Inc. ("Wugen"), pursuant to begin which Wugen licensed limited rights to draw down develop, manufacture, and commercialize cell therapy treatments for cancer based on two of the Company's internally-developed multi-cytokine fusion protein molecules, and its manufacturing and supply arrangement with Wugen. In the three months ended March 31, 2023 and 2024, the Company recognized revenues of $26.3 41,883 and $1.1 million, Development Line respectively, generated from the supply of Credit Agreement, clinical and research grade material to Wugen.

As of March 31, 2024, we held $4.1 million of cash and cash equivalents, and there was substantial doubt about the proceeds Company's ability to continue as a going concern. Under the guidance of Topic 205-40 for going concern assessment, we evaluated whether we mitigated substantial doubt over our ability to remain a going concern. We considered that the Company is expecting to continue to generate losses as its products are in clinical development and will not generate commercial sales. Subsequent to the end of the first quarter, the Company raised $1.6 million in additional financing, consisting of funds received from the issuance of senior secured notes ("Secured Notes") to the Company's Founder and Chief Executive Officer. After considering management's plan for financing and funds raised since year end, management concluded that substantial doubt is not alleviated. Therefore, substantial doubt remains over whether the Company has the ability to continue as a going concern within 12 months from the date of issuance of the condensed interim financial statements.

In the second quarter of 2024, management made some reductions in costs, but in order to continue the clinical development for the Company's lead product candidates, the Company must maintain a core group of scientists. The Company continues to pursue a plan to obtain bridge financing through the issuance of up to $10.0 million in Secured Notes, $3.6 million of which will be primarily used for have been issued through the buildout date of issuance of the Company's headquarters, condensed interim financial statements. The Company anticipates that this bridge financing, if fully subscribed, will allow the Company to reach such time as it can execute plans for business development transactions such as licenses for non-core assets and capital-raising transactions, although there can be no assurance of this outcome for many reasons, including upgraded research laboratories and a new manufacturing facility. See the uncertainties regarding the Company's ongoing arbitration proceedings with Altor/NantCell, as described in Note 8. Commitments and Contingencies - Project Financing herein. The Company intends to raise capital through additional debt or equity financings. In addition to the Company intends to continue its efforts to enter into business development transactions. Business development efforts are focused on out-licensing rights to non-core assets or regional markets, third-party collaboration funding, bridge financing in the form of the sale of additional Secured Notes, other potential near-term financing plans may

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include cooperative agreements for clinical trials and other transactions. However, if third-party collaboration funding. If the Company is not able successful in raising additional capital, management has the intent and ability to obtain financing at adequate levels, it will need to reevaluate revise its operating business plan and reduce costs. If such revisions are insufficient, the Company may be required have to delay curtail or cease operations.

The accompanying financial statements have been prepared on a going concern basis, which contemplates the development realization of some assets and satisfaction of liabilities in the ordinary course of business. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might result from the outcome of the uncertainties described above.

The Company believes that substantial doubt exists regarding its products. ability to continue as a going concern for at least 12 months from the date of issuance of the Company's condensed interim financial statements, without additional funding or financial support. After considering management's plan for financing and funds raised that are probable to occur within one year, as well as that the Company expects to continue to incur losses from operations for the foreseeable future, management concluded that the substantial doubt that existed in its going concern analysis was not alleviated.

Summary of Significant Accounting Policies

Basis of Presentation

Unaudited Interim Financial Information

The accompanying unaudited condensed interim financial statements as of September 30, 2023 March 31, 2024 and for the three three-month periods ended March 31, 2023 and nine months ended September 30, 2022 and 2023 2024 have been prepared in accordance with accounting principles

generally accepted in the United States of America (“U.S. GAAP”) for interim financial information and pursuant to Article 10 of Regulation S-X of the Securities Act of 1933, as amended (the “Securities Act”). Accordingly, they do not include all of the information and notes required by U.S. GAAP for complete financial statements. These unaudited condensed interim financial statements include only normal and recurring adjustments that the Company believes are necessary to fairly state the Company’s financial position and the results of its operations and cash flows. The results for the three and nine months three-month period ended September 30, 2023 March 31, 2024 are not necessarily indicative of the results expected for the full fiscal year or any subsequent interim period. The condensed interim balance sheet at December 31, 2022 December 31, 2023 has been derived from the audited financial statements at that date but does not include all disclosures required by U.S. GAAP for complete financial statements. Because all of the disclosures required by U.S. GAAP for complete financial statements are not included herein, these unaudited condensed interim financial statements and the notes accompanying them should be read in conjunction with the Company’s audited financial statements for the year ended December 31, 2022 December 31, 2023 which appear in the Company’s Annual Report on Form 10-K (No. 001-40591) filed for the year ended December 31, 2022 December 31, 2023 filed with the Securities and Exchange Commission (the “SEC”) on March 28, 2023 May 15, 2024 (the “Annual Report”) and in other filings with the SEC.

Deposit for Interest Reserve

The Company has established an interest reserve account for the purpose of paying interest on outstanding debt under the Development Line of Credit Agreement which is further described in Note 8. Commitments and Contingencies - Project Financing herein. As of September 30, 2023, there was a balance of $5.3 million included in Deposit for interest reserve in noncurrent assets on the accompanying condensed balance sheet.

Revenue Recognition

The Company accounts for revenues in accordance with Accounting Standards Codification Topic 606, Revenue from Contracts with Customers (“Topic 606”). To determine revenue recognition for arrangements that fall within the scope of Topic 606, the Company performs the following five steps: (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 Company satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that it will collect the consideration it is entitled to in exchange for the goods or services transferred to the customer.

At contract inception, the Company assesses the goods or services promised within each contract, determines those that are performance obligations, and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied. To date, the Company's revenues have been generated solely from transactions with Wugen. The Wugen License includes licenses of intellectual property, cost reimbursements, upfront signing fees, milestone payments and royalties on future licensee’s product sales. In addition, the Company and Wugen have an agreement for supply of materials, from which the Company also recognizes revenues.

License Grants:

For out-licensing arrangements that include a grant of a license to the Company’s intellectual property, the Company considers whether the license grant is distinct from the other performance obligations included in the arrangement. For licenses that are distinct, the Company recognizes revenues from nonrefundable, upfront payments and other consideration allocated to the license when the license term has begun and the Company has provided all necessary information regarding the underlying intellectual property to the customer, which generally occurs at or near the inception of the arrangement.

Milestone and Contingent Payments:

At the inception of the arrangement and at each reporting date thereafter, the Company assesses whether it should include any milestone and contingent payments or other forms of variable consideration in the transaction price using the most likely amount method. If it is probable that a significant

reversal of cumulative revenue would not occur upon resolution of the uncertainty, the associated milestone value is included in the transaction price. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of each such milestone and any related constraint and, if necessary, adjusts its estimate of the overall transaction price. Since milestone and contingent payments may become payable to the Company upon the initiation of a clinical study or filing for or receipt of regulatory approval, the Company reviews the relevant facts and circumstances to determine when the Company should update the transaction price, which may occur before the triggering event. When the Company updates the transaction price for milestone and contingent payments, the Company allocates the changes in the total transaction price to each performance obligation in the agreement on the same basis as the initial allocation. Any such adjustments are recorded on a cumulative catch-up basis in the period of adjustment, which may result in recognizing revenue for previously satisfied performance obligations in such period. The Company's licensees will generally pay milestones payments subsequent to achievement of the triggering event.

Materials Supply:

The Company provides clinical and research grade materials so that licensees may develop products based on the licensed molecules. The Company plans to enter into commercialization supply agreements when licensees enter the commercial stage of their company. The amounts billed are recognized as revenue as the performance obligations are satisfied by the Company, once the Company determines that a contract exists.

On June 18, 2021, the Company entered into a master services agreement (“MSA”) for the supply of materials for clinical development of licensed products. Under the MSA, On March 14, 2022, the Company enters entered into statements-of-work (“SOWs”) contemplated under the MSA for transactions for the purchase all current and historical purchases of clinical and research grade materials which meet materials. The Company determined that upon entering into the SOWs all requirements necessary were met to qualify as a contract under Topic 606. The

sale manufacturing of the clinical and research material materials supplied by the Company each represents a single performance obligation that is satisfied over time. The Company recognizes revenue using an input method based on the costs incurred relative to the total expected cost, which determines the extent of the Company's progress toward completion. As part of the accounting for these arrangements, the Company must develop estimates and assumptions that require judgement to determine the progress towards completion. The Company reviews its estimate of the progress toward completion based on the best information available to recognize the cumulative progress toward completion as of the end of each reporting period, and makes revisions to such estimates, if facts and circumstances change during each reporting period.

The For the three months ended March 31, 2024, the Company recognized $1.1 million in revenue related to sale of development supply materials to its licensee, Wugen, of $1.8 million and $5.4 million, respectively, for the three and nine months ended September 30, 2022; and $853,102 and $1.5 million, respectively, for three and nine months ended September 30, 2023. materials.

Investments

The Company holds a minority interest in Wugen which is accounted for using the measurement alternative whereby the investment is recorded at cost less impairment, adjusted for observable price changes in orderly transactions for an identical or similar investment of the same investee. No impairment has been recognized on the minority interest in Wugen as of September 30, 2023. recognized. As of December 31, 2022 March 31, 2024 and September 30, 2023 December 31, 2023, the Company included $1.6 million for the investment in Wugen in Investments in the accompanying condensed interim balance sheets. The Company used its equity interest in Wugen to collateralize the Secured Notes. See Note 3. Debt, Net.

From time to time, the The Company invests excess cash in bills and notes issued by the U.S. Treasury which are classified as trading securities. The As of December 31, 2023 and March 31, 2024, the Company reported a fair value of $ had 9.7 no million and nil for the fair value of investments in U.S. Treasury bills as of December 31, 2022 and September 30, 2023, respectively, included in Short-term investments in the accompanying condensed balance sheets. investments.

Operating Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in Other assets, Accrued liabilities and other current liabilities, and Other liabilities on the accompanying its condensed interim balance sheets. Operating lease Right of Use (“ROU”) assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As the Company’s leases do not provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at commencement date in determining the present value of future payments. The operating lease ROU asset also includes any lease payments made and excludes lease incentives and initial direct costs incurred. The Company has a lease agreement with lease and non-lease components, which are accounted for separately. For short-term leases with a term of one year or less, the Company uses the practical expedient and does not record an ROU asset or lease liability for such short-term leases.

Net Loss Per Share

Basic loss per share of common stock is computed by dividing net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during each period. Diluted loss per share of common stock includes the effect, if any, from the potential exercise of stock options and unvested shares of restricted stock, which would result in the issuance of incremental shares of common stock. For diluted net loss per share, the weighted-average number of shares of common stock is the same for basic net loss per share due to the fact that when a net loss exists, dilutive securities are not included in the calculation as the impact is anti-dilutive.

2. Accrued Liabilities and Other Current Liabilities

As of December 31, 2022 December 31, 2023, the Company had a balance of $1.7 2.6 million included in Accrued liabilities and other current liabilities in the audited balance sheet, consisting of $392,000 for construction expenses, $105,000 for manufacturing expenses, $1.1 million for legal fees, $262,000 for clinical expenses, $365,000 for bonus payable, $160,000 for salary expenses, $119,000 for the current portion of long-term debt, $28,500 for a lease liability and $68,500 for other liabilities.

As of March 31, 2024, the Company had a balance of $2.9 million included in Accrued liabilities and other current liabilities in the accompanying condensed interim balance sheet, consisting primarily of $416,000 1.6 million for legal fees, $874,000 for legal expenses, construction in progress, $277,500 202,000 for clinical expenses, $524,000 57,000 for bonus expenses, payable, $134,000 for salary and benefits, and $178,000 for a lease liability.

As of September 30, 2023, the Company had a balance of $2.3 million in Accrued liabilities and other current liabilities in the accompanying condensed balance sheet, consisting primarily of the following: $208,000 for retainage related to renovation of the Company's headquarters; $892,000 related to legal matters further described in Note 8. Commitments and Contingencies - Legal herein; $246,000 for clinical expenses; $365,000 related to performance-based bonuses; $81,000 for salary and benefits; $71,000 for a lease liability; $117,680 122,152 for the current portion of long-term debt; debt and $40,000 102,000 for legal fees related to patent prosecution as well as other legal expenses incurred in the ordinary course of business. salary and benefits.

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3. Debt, Net

Cogent Bank Loan

On August 15, 2022, the Company entered into a loan and security agreement (the "2022 “2022 Loan Agreement" Agreement”) with Cogent Bank, ("Cogent"), pursuant to which it received $6.5 million in gross proceeds to purchase a building that will become the Company's new headquarters. The Cogent loan is secured by a first priority lien on the building.

Under As of March 31, 2024, the terms of Company had $6.4 million in principal outstanding in a loan under the 2022 Loan Agreement, the Agreement. The interest-only period is was one year followed by 48 months of equal payments of principal and interest beginning on September 15, 2023 based on a 25-year amortization rate. The unamortized balance is due on August 15, 2027 (the “Cogent Maturity “Maturity Date”), and bears interest at a fixed per annum rate equal to 5.75%. At Upon the Cogent Maturity Date, a final payment of unamortized principal will be due. The Company is in compliance with all covenants as of March 31, 2024. The Company has the option to prepay the outstanding balance of the loan prior to the Cogent Maturity Date without penalty. The Company is in compliance with all covenants under the 2022 Loan Agreement as of September 30, 2023.

As of December 31, 2022 March 31, 2024, the 2022 Loan Agreement consisted of $6.5 million which is included in Debt, net on the accompanying condensed balance sheet. As of September 30, 2023, it consisted of a current portion of $117,680 122,152 which is included in Accrued liabilities and other current liabilities, and a the noncurrent portion of $6.3 6.4 million is included in Debt, net in the accompanying condensed interim balance sheet.

Senior Secured Notes

On March 28, 2024, the Company entered into the Note Purchase Agreement with the Purchasers (as defined in the Note Purchase Agreement), pursuant to which the Company may issue Secured Notes up to an aggregate principal amount up to $10.0 million, and issued $2.0 million of Secured Notes to certain accredited investors. Secured Notes were issued to the following investors: Dr. Hing C. Wong, Founder and Chief Executive Officer, who invested $620,000; Rebecca Byam, Chief Financial Officer, who invested $220,000; and Gary M. Winer, member of our Board of Directors, who invested $50,000, as well as unrelated parties. As of March 31, 2024, the Company received $1.8 million in cash payments for the Secured Notes. A check payment of $250,000, that has since cleared, is included in Secured note receivable in the accompanying condensed interim balance sheet.

The Note Purchase Agreement sets forth the terms and conditions, including representations and warranties, for our issuance and sale of the Secured Notes to the Purchasers. The indebtedness for the Secured Notes is included in Debt, net in the accompanying condensed interim balance sheet.

The Senior Notes bear interest at a rate of 9% per annum, payable quarterly in arrears, and mature on March 27, 2026 (the “Maturity Date”), on which date the principal balance and accrued but unpaid interest under the Secured Notes shall be due and payable. If the Company elects to prepay the Senior Notes prior to the Maturity Date, there is a 5% prepayment penalty. As security for the Secured Notes, the Company pledged its equity ownership interest in Wugen, which was equivalent to a 5.6% ownership stake in that company as of March 31, 2024 (“Pledged Collateral”). The Pledged Collateral will be held and released according to the terms of the Escrow Agreement, as security for the Secured Notes.

The Secured Notes have a Mandatory Prepayment provision, according to which the Company is required to prepay the Secured Notes under certain circumstances. The Note Purchase Agreement also contains default provisions, according to which the

Company shall be required to distribute the Pledged Collateral to the Purchasers on a pro rata basis, in full satisfaction of the indebtedness evidenced by the Secured Notes.

4. Preferred Stock

At December 31, 2022 As of December 31, 2023 and September 30, 2023 March 31, 2024, the Company had 10,000,000 shares of preferred stock authorized and no shares issued.

5. Net Loss Per Share

The following table summarizes the computation of the basic and diluted net loss per share:

	Three Months Ended September 30,		Nine Months Ended September 30,		Three Months Ended March 31,	
	2022	2023	2022	2023	2023	2024
Numerator:						
Net loss	$ (3,914,194)	$ (4,938,641)	$ (9,481,962)	$ (14,313,746)	$ (5,070,686)	$ (7,468,061)
Denominator:						
Weighted-average common shares outstanding	35,835,135	35,926,921	35,809,216	35,907,123	35,883,779	37,223,588
Net loss per share, basic and diluted	$ (0.11)	$ (0.14)	$ (0.26)	$ (0.40)	$ (0.14)	$ (0.20)

The following table summarizes the outstanding potentially dilutive securities that have been excluded in the calculation of diluted net loss per share because their inclusion would be anti-dilutive:

	At September 30,	
	2022	2023
Common stock options	1,907,991	1,869,492

Potentially diluted securities	1,907,991	1,869,492

	At March 31,	
	2023	2024
Common stock options	1,856,463	1,764,766
Potentially dilutive securities	1,856,463	1,764,766

6. Fair Value of Financial Instruments

The carrying amount of the Company's financial instruments, including cash and cash equivalents, accounts receivable, prepaid expenses and other current assets, U.S. government-backed securities with maturity dates up to one year, accounts payable accrued liabilities and other current accrued liabilities, approximate fair value due to their short-term maturities. The balance of funds included in Deposit for interest reserve is held in a non-interest bearing account and its carrying value approximates its fair value.

Money market funds included in cash and cash equivalents and U.S. government-backed securities are measured at fair value based on quoted prices in active markets, which are considered Level 1 inputs. No transfers between levels occurred during the periods presented. The following table presents the Company's assets which were measured at fair value at December 31, 2022 December 31, 2023 and September 30, 2023 March 31, 2024:

	At December 31, 2022:				At December 31, 2023:			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Money market funds	$ 19,458,020	$ —	$ —	$ 19,458,020	$ 1,626,129	$ —	$ —	$ 1,626,129
Treasury notes	9,735,930	—	—	9,735,930				
Total	$ 29,193,950	$ —	$ —	$ 29,193,950	$ 1,626,129	$ —	$ —	$ 1,626,129

	At September 30, 2023:				At March 31, 2024:			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Money market funds	$ 9,999,421	$ —	$ —	$ 9,999,421	$ 703,325	$ —	$ —	$ 703,325
Total	$ 9,999,421	$ —	$ —	$ 9,999,421	$ 703,325	$ —	$ —	$ 703,325

7. Income Taxes

The Company computes its quarterly income tax expense/(benefit) by using a forecasted annual effective tax rate and adjusts for any discrete items arising during the quarter. The Company did not have a provision for income taxes (current or deferred tax

expense) as of December 31, 2022 December 31, 2023 and September 30, 2023 March 31, 2024. The Company will continue to maintain a 100% valuation allowance on total deferred tax assets. The Company believes it is more likely than not that the related deferred tax asset assets will not be realized. As a result, the Company's effective tax rate will remain at 0.00% because no items either estimated or discrete items would impact the tax provision.

8. 8. Commitments and Contingencies

Operating Leases

The Company has operating leases for approximately 12,250 square feet of space located in Miramar, Florida. The leases have a two-year term which commenced on March 1, 2022 and will terminate terminated on February 29, 2024. Upon the commencement of the leases, the Company used its incremental borrowing rate of 6.0% to determine the amounts to recognize for a ROU asset and a lease liability. There The Company entered a new one-year lease for the same location which commenced on March 1, 2024 and terminates on February 28, 2025. If a lease has a term that is 12 months or less in duration, the lease qualifies for a short-term lease exemption under ASC 842-20-25-2. The Company elected to take advantage of this exemption, and it will account for this lease on a straight-line basis over the lease term and will not recognize a ROU asset and a lease liability as a result. The remaining lease payments under the new short-term lease are $251,921. The Company has no obligations under finance leases.

The components of the lease expense for the three and nine months ended September 30, 2023 March 31, 2024 were as follows:

	For the Three Months Ended September 30, 2023	For the Nine Months Ended September 30, 2023
Operating lease cost	$ 42,413	$ 127,238

	For the Three Months Ended March 31, 2024
Operating lease cost	$ 28,275

Supplemental cash flow information related to lease for the nine months ended September 30, 2023 Company's operating lease was as follows:

	For the Nine Months Ended September 30, 2023	For the Three Months Ended March 31, 2024
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows	$ 127,229	$ 28,793
Right-of-use assets obtained in exchange for lease obligations:		
Operating lease	$ 120,973	$ 28,061

As of September 30, 2023, the supplemental balance sheet information related to leases was as follows:

	As of September 30, 2023
Operating lease right-of-use assets	$ 69,624
Operating lease liabilities, current	$ 70,669

As of September 30, 2023, the remaining lease payments were as follows:

2023	$ 42,831
2024	28,693
Total future minimum lease payments	$ 71,524

For the three months ended September 30, 2022 March 31, 2023 and 2023, 2024, rent expense recognized by the Company was $43,700 43,950 and $42,400 47,838, respectively, of which $22,200 22,212 and $22,200 23,453, respectively, is are included in research and development in the accompanying condensed interim statements of operations.

For the nine months ended September 30, 2022 and 2023, rent expense recognized by the Company was $ operations 130,300 and $127,200, respectively, of which $57,800 and $66,600, respectively, is included in research and development in the accompanying condensed statements of operations.

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Contractual Commitments

The Company entered into an agreement has commitments with a third-party global manufacturing organization to supply us with clinical grade materials. As of March 31, 2024, it is under contract development for obligations of $649,517 it expects to pay during the year ending December 31, 2024. As of December 31, 2023 and manufacturer of biologics for the manufacture of the Company's proprietary molecules for use in clinical trials. At December 31, 2022 and September 30, 2023, future payment obligations under such agreements were $406,000 and $1.8 million, respectively. In addition, as of December 31, 2022 March 31, 2024, the Company committed had commitments to purchase upstream processing and fluid management equipment for fund $1.6 4.4 million and it advanced $495,000 2.8 for this purchase as million, respectively, in construction costs related to the buildout of September 30, 2023. its new headquarters and manufacturing facility.

Project Financing

On April 21, 2023 January 10, 2024 (the "Termination Date"), the Company entered into a secured Development Line of Credit Agreement (such exercised its right to terminate its credit agreement as amended from time to time, the "2023 Loan Agreement" (the "Credit Agreement"), dated April 21, 2023, with Prime Capital Ventures, LLC ("Prime" (the "Lender"), pursuant to which Prime will advance loans to as permitted under the terms of the Credit Agreement. The termination followed repeated delays in funding and related concerns. There were no borrowings under the Credit Agreement as of the Termination Date, and the Company in did not incur any penalties as a principal amount not to exceed $26.3 million with a scheduled maturity result of April 20, 2028 (the "Prime Maturity Date"). The Company has such termination under the option to prepay the balance terms of the loan prior Agreement. Upon exercising its right to terminate the Prime Maturity date without penalty. The note issued pursuant to the 2023 Loan Agreement bears interest at a fixed rate equal to 7.00% per annum, due monthly in arrears on the first day of each month. The primary purpose of the loan is to provide the funding required to complete the buildout of the Company's new headquarters, including improved research laboratories and a vivarium to support the Company's preclinical research efforts, and a manufacturing facility to produce GMP material to support the Company's clinical development as well as produce material to support the clinical development of its licensee, Wugen.

Under the 2023 Loan Agreement, the Company was required entitled to fund an interest reserve bank account controlled by Prime in receive the amount return of the $5.3 million that the Company placed on deposit to fund establish an interest reserve account with the Lender. In the three months ended March 31, 2024, the Lender defaulted on its obligation to return the interest payments due thereunder. The balance reserve deposit. Given the uncertainty of when or if funds will be

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recovered from the reserve account is presented in Deposit for interest reserve in noncurrent assets on the accompanying condensed balance sheet. As of September 30, 2023, Lender, the Company had no outstanding borrowings under the 2023 Loan Agreement. On August 10, 2023, the Company obtained construction permits required to begin the buildout of its new headquarters. This satisfied the final condition precedent to accessing the recognized a reserve for a credit loss for $26.3 5.3 million line as of credit. December 31, 2023. The Company will incur $1.8 million in debt issuance costs in connection intends to the Prime loan, which will be earned pursue all available remedies to recover these funds, including legal actions, receivership and payable upon the first draw down. In November 2023, the Company expects to begin to draw down funds available under the 2023 Loan Agreement. insurance.

Legal

Legal Proceedings

From time to time, the Company is a party to or otherwise involved in legal proceedings, including suits, assessments, regulatory actions and investigations generally arising out of the normal course of business. In addition, the Company enters into agreements that may include indemnification provisions, pursuant to which the Company agrees to indemnify, hold harmless and defend the indemnified parties for losses suffered or incurred by the indemnified party. When the Company believes that the outcome of such a matter will result in a liability that is probable to be incurred and result in a potential loss, or range of loss, that can be reasonably estimated, the Company will accrue a liability and make the appropriate disclosure in the footnotes to the financial statements.

On December 23, 2022, Altor BioScience, LLC and NantCell, Inc. ("Altor/NantCell") initiated an arbitration against Dr. Hing C. Wong, the Company's Founder and Chief Executive Officer, in California alleging breach of contract and fiduciary duty, among other claims. On that same date, Altor/NantCell filed a lawsuit against the Company in federal court alleging misappropriation of trade secrets, inducement of breach of contract and breach of fiduciary duty, among other claims against the Company. On January 31, 2023, the Company filed a motion to compel arbitration, a motion for the stay of the litigation, and a motion to

dismiss the complaint (“motion to compel”). On April 18, 2023, the U.S. District Court for the Southern District of Florida (the “Court”) heard oral argument on the Company’s motion to compel and ordered the parties to provide supplemental briefing by April 28, 2023. Before the Court ruled on the Company’s motion to compel, on April 26, 2023, the parties stipulated that Altor/NantCell’s action against the Company would be consolidated with the Altor/NantCell arbitration demand against Dr. Wong. On April 27, 2023, the Court approved the parties’ stipulation and ordered the parties to arbitration. On May 1, 2023, Altor/NantCell filed a demand against the Company before JAMS. On May 3, 2023, Altor/NantCell dismissed the federal court action without prejudice and the Court ordered the case dismissed without prejudice and closed the case. Altor/NantCell’s proceeding against the Company is now proceeding in arbitration before JAMS. JAMS and is consolidated with the arbitration Altor/NantCell initiated against Dr. Wong. The arbitration hearing is scheduled to begin on May 20, 2024.

In addition, on March 26, 2024, Altor/NantCell filed a complaint (the “Complaint”) against the Company in the Chancery Court of the State of Delaware for the contribution of legal fees and expenses advanced to Dr. Wong, our founder and chief executive officer, in connection with the arbitration discussed above. Prior to the filing of the Complaint, Altor/NantCell had previously sought advancement from the Company and the Company agreed to advance 50% of Dr. Wong’s legal fees going forward from December 2023. On January 8, 2024, Altor/NantCell reserved their right to pursue contribution against the Company for 50% of the amount Altor/NantCell sent for advancement of expenses for Dr. Wong. In the Complaint, Altor/NantCell seek 50% of the fees they have already advanced to Dr. Wong, a declaration that the Company has an obligation to contribute 50% of the advancement of Dr. Wong’s expenses including 50% of Dr. Wong’s expenses incurred in connection with the arbitration through final resolution of the matter, and costs and fees in bringing this action.

Other Matters

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Prior to the date of issuance, certain subcontractors filed mechanics liens related to unpaid invoices issued in connection with the Company’s construction of its new manufacturing facilities and upgraded research laboratories. The Company continues to seek a lender to provide financing to complete this project.

Inflationary Cost Environment, Geopolitical Risks Banking Crisis, Supply Chain Disruption and Other the Macroeconomic Factors Environment

The Company’s operations have been affected by many headwinds, including inflationary pressures, rising interest rates, ongoing global supply chain disruptions resulting from increased geopolitical tensions such as the war in the Middle East, the conflict between Russia and Ukraine, Chinese aggression towards Taiwan, China-Taiwan relations, financial market volatility and currency movements. The Company has been impacted by inflation, and may continue to be so, when procuring materials required for the buildout of our new headquarters, the costs for recruiting and retaining employees and other employee-related costs. Management employs a number of strategies to effectively navigate these issues, including product redesign, alternate sourcing, and establishing contingencies in budgeting and timelines. Future developments in these and other areas present material uncertainty and risk with respect to the Company's clinical trials, IND-enabling activities, buildout of the new headquarters, as well as the Company's financial condition and results of operations. The extent and duration of such events and conditions, and resulting disruptions to our operations, are highly unpredictable.

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9. Subsequent Events

Subsequent events have been evaluated through the date the financial statements were available filed. In addition to be issued. As of such date, there were no material subsequent events identified that the required recognition or disclosure other than as disclosed in the footnotes herein. herein, there were also the following subsequent events after the reporting date:

On May 13, 2024, the Company’s Founder and Chief Executive Officer purchased an additional $1.6 million in Secured Notes, bringing his total purchases of Secured Notes to $2.2 million. The Board of Directors and the Audit Committee of the Board of Directors reviewed the transaction under the Company’s policy for Related Party Transactions (the “Policy”) and determined that the transaction was in compliance with the Policy.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with (i) our unaudited condensed interim financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q and (ii) our audited financial statements and related notes and the discussion under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations" for the fiscal year ended December 31, 2022 December 31, 2023 included in the Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission (the "SEC") on March 28, 2023 May 15, 2024 (the "Annual Report"). Our historical results are not necessarily indicative of the results that may be expected for any period in the future. Unless the context requires otherwise, references in this Quarterly Report on Form 10-Q to the "Company," "HCW Biologics," "HCWB", "we," "us" and "our" refer to HCW Biologics Inc.

Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements other than statements of historical facts contained in this quarterly report, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing and likelihood of success of our clinical trials, plans and objectives of management for future operations, adequacy of our cash resources and working capital, future economic conditions or performance, and future results of anticipated products, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expect," "plan," "anticipate," "could," "intend," "target," "project," "contemplates," "believes," "estimates," "predicts," "potential" or "continue" or the negative of these terms or other similar expressions. The forward-looking statements in this Quarterly Report on Form 10-Q are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in this report in Part II, Item 1A -"Risk Factors," in this Quarterly Report on Form 10-Q and in other filings we make with the SEC from time to time. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. These forward-looking statements speak only as of the date hereof. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

Overview

HCW Biologics Inc. is a clinical-stage biopharmaceutical company focused on discovering and developing novel immunotherapies to lengthen healthspan health span by disrupting the link between chronic, low-grade inflammation and age-related diseases. We believe age-related, chronic, low-grade inflammation, or "inflammaging," is a significant contributing factor to several diseases and conditions, such as cancer, cardiovascular disease, diabetes, neurodegenerative diseases, and autoimmune diseases.

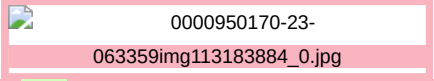
The induction and retention of low-grade inflammation in an aging human body is mainly the result of the accumulation of non-proliferative but metabolically active senescent cells, which can also be caused by persistent activation of protein complexes, known as inflammasomes, in innate immune cells. These two elements share common mechanisms in promoting secretion of pro-inflammatory proinflammatory proteins and in many cases interact to drive senescence, and thus, inflammaging. Our novel approach is to reduce senescent cells and eliminate the pro-inflammatory proinflammatory factors they secrete systemically through multiple pathways. We believe our approach has the potential to fundamentally change the treatment of age-related diseases.

Accumulation of senescent cells with a senescence-associated proinflammatory factors has been implicated as a major source of chronic sterile inflammation leading to many aging-related pathologies. The key to the HCWB immunotherapeutic approach is elimination of senescent cells and the proinflammatory factors they secrete. Our lead product candidates address the two primary processes that promote chronic inflammation. inflammation, as explained below:

HCW9218. Subcutaneous administration of our clinical-stage, lead drug candidate, HCW9218, is our clinical stage lead product candidate which is administered by subcutaneous injection. activates NK cells, innate lymphoid group-1, and CD8+T cells, and neutralizes TGF-β. This bi-functional immunotherapeutic has demonstrated bifunctionality gives HCW9218 the ability to reduce senescent cells

as well as eliminate senescence-associated proinflammatory factors, and function as a senomorphic that eliminates senescence-associated pro-inflammatory factors. We have made progress in developing a deep understanding of the anti-cancer mechanism of action of agent. HCW9218 especially in relation to how it complements immune checkpoint inhibitors and chemotherapies. In preclinical testing in different cold tumor models and data from correlative studies conducted in conjunction with our clinical trials, HCW9218 has demonstrated that it has a unique mechanism of action that we believe is the key to turning a 'cold' tumor into a 'hot' tumor, indicating the potential of the anti-cancer utility of HCW9218 in combination with standard-of-care anti-cancer therapies. The graphic below depicts the potential of HCW9218 in widely-used, FDA-approved anti-cancer therapies.

HCW9218 Platform to Boost Anti-Cancer Utility of Standard-of-Care Cancer Therapies



The Company plans to focus its clinical development basis for future Phase 2 clinical trials in two of the areas of utility depicted in the graphic above:

HCW9218 + chemotherapy. Chemotherapy is the current standard of care for treating most forms of cancer. Tumor cells can undergo senescence and secrete pro-inflammatory factors, or SASP factors, in response to chemotherapy, a process referred to as therapy-induced senescence ("TIS"). SASP factors promote TIS our cancer cells to re-enter the growth cycle with stem-like characteristics which can result in disease relapse and metastasis. HCW9218 is designed to treat the impact of accumulated senescent cells and the SASP factors which they secrete by eliminating senescent cells (i.e., senescent cell reducing effect) and reducing SASP factors (i.e., senomorphic effect). One of the key SASP factors is TGF-β, well known for its immunosuppressive role in cancer progression. HCW9218 is designed with a TGF-β trap for TGF-β neutralization.

HCW9218 + immune checkpoint inhibitors.HCW9218 addresses a key challenge for immune checkpoint inhibitors: Exhausted T cells. Preclinical studies have shown that HCW9218 stimulates and expands progenitor exhausted stem-like and transitory CD8+ T cells in the tumor draining lymph nodes followed by trafficking of these cells into the tumors. This opens a pathway for enhancing the anti-tumor activity of immune checkpoint inhibitors. HCW9218 also substantially lowers the TGF-β activity in the tumor microenvironment to lessen immunosuppression which the Company believes will also enhance the effectiveness of immune checkpoint inhibitors.

Outside of the Company's main focus are two other standard-of-care cancer treatments shown above, antibody- and cell-based therapies. Our preclinical studies have demonstrated HCW9218 may have the potential to boost the effectiveness of these two anti-cancer therapies. HCW9218 activates natural killer ("NK") cells to increase their antibody-dependent cytotoxicity against cancer cells. As a result, combination therapy of HCW9218 and a tumor-specific antibody was more efficacious than either therapy alone in a mouse melanoma model. HCW9218 treatment also can activate and induce adoptively transferred tumor-specific $CD8^+$ T cells to traffic into tumors and carry out their effector functions in reducing tumor growth. Our business development activities include a search for partners who are focused on these areas for out-license arrangements and collaborations. program.

HCW9302. Subcutaneous administration of our preclinical-stage, lead drug candidate, HCW9302, is our preclinical lead product candidate administered by subcutaneous injection. This immunotherapeutic is designed to activate and expand T_{reg} cells to reduce senescence by suppressing the activity of inflammasome-bearing cells and the inflammatory factors which they secrete through activation and expansion of regulatory T cells ("T_{reg}") cells. This molecule secrete. HCW9302 is a single-chain, IL-2-based fusion protein. Preclinical studies in mouse models have demonstrated the ability of HCW9302 to expand and activate T_{reg} cells and reduce inflammation-related diseases, supporting the potential of HCW9302 to treat a wide variety of basis for our autoimmune and pro-inflammatory diseases, such as atherosclerosis. We are in the process of completing IND-enabling studies and intend to prepare and submit an Investigational New Drug ("IND") application to the FDA for permission to conduct a clinical trial in an autoimmune indication in the fourth quarter of 2023.

Recent Developments program.

Business Highlights

Financing

- In November 2023, The Company raised $6.1 million to date in 2024, from private placement of common stock and issuance of senior secured notes ("Secured Notes").
- Management financing plans are to raise a human data readout bridge financing through the issuance of up to an aggregate of $10.0 million of Secure Notes, of which $3.6 million have been issued to date in 2024. If we succeed, we expect the bridge financing will enable the Company to continue with clinical development plans, until such time as we can complete planned business development transactions such as license for non-core assets and c raising transactions.
- As of March 31, 2024, we believe that substantial doubt exists regarding our ability to continue as a going concern for at least 12 months from the dat issuance, without additional funding or financial support. After giving consideration to elements of our financing plan that were probable to occur within year of the date of issuance, we concluded that substantial doubt was not alleviated in the going concern analysis.

Clinical Development

- The Phase 1 clinical trial and correlative studies to evaluate HCW9218 in solid tumors were presented at and the 38th Annual Meeting of the Society f Immunotherapy of Cancer ("SITC") by the Principal Investigator, Dr. Melissa A. Geller, Professor and Division Director of Gynecologic Oncology in the Department of Obstetrics, Gynecology and Women's Health at the University of Minnesota. This clinical readout was based on 15 patients who were enrolled in the study as of October 16, 2023, all of whom were patients whose disease had previously progressed after multiple lines of standard-of-ca therapy. The trial is now in its final expanded dose level, and we expect it to be completed in the fourth quarter of 2023. There has been one dose-limi toxicity experience in this study, but it did not trigger stopping rules. Highlights of data presented at SITC include:
  - HCW9218 was administered subcutaneously once every three weeks for up to six cycles at dose levels 0.25 mg/kg (DL1), 0.5 mg/kg (DL2), 0. mg/kg (DL3) or 1.2 mg/kg (DL4). The median number of cycles was three.
  - 87% (13/15) had >4 lines of prior therapy. Tumor types included: Ovarian (n=6), Colorectal (n=4), Rectal (n=3), and Liver (n=2).
  - 53% (8/15) patients treated with HCW9218 were evaluated in a post-treatment assessment, including biopsies and scanning. Tumor types incl Ovarian (n=3), Colorectal (n=3), Rectal (n= 1) and Liver (n=1).
  - 50% (4/8) patients evaluated in post-treatment assessments exhibited stable disease following HCW9218 treatment. Patients showed stable disease lasting over 6 months. Clinical benefit was observed from DL2, DL3 and DL4.
  - 66% (2/3) patients with ovarian cancer who underwent post-treatment assessments showed stable disease.
  - HCW9218 significantly reduced blood levels of TGF-β in cancer patients in a dose-dependent manner, without causing treatment-emergent sk lesions and bleeding events previously reported with TGF-β antagonists in clinic.
  - HCW9218 strongly promotes proliferation and activation of NK and T cells in patients' blood after dosing without causing cytokine release syndrome. No liver enzyme elevation was observed. HCW9218 also showed a substantial increase in blood NK cell counts three weeks after a single dosing.
  - HCW9218 treatment presents a promising approach to enhancing the antitumor activity of immune checkpoint inhibitors in patients with solid tumors based on the ability of HCW9218 to activate, expand and induce tumor trafficking of progenitor exhausted stem-like and transitory $CD8^{+}$ T cells.
  - Repeated HCW9218 administration up to the highest planned dose level was well tolerated by patients with chemotherapy-refractory advance solid tumors, which has provided support for the Recommended Phase 2 Dose ("RP2D") level for future Phase 2 studies of HCW9218.
- In a Company-sponsored Phase 1b clinical trial to evaluate HCW9218 in the treatment of chemo-refractory/chemo-resistant pancreatic cancer were completed in February 2024. In the trial has completed three dose escalation cohorts and has begun Phase 1 study, over 70% of patients with ovarian cancer (5/7) showed evidence of stable disease. In the fourth, with no dose-limiting toxicity to date. We expect this trial to be completed late in late 20 early 2024, with a human clinical data readout anticipated Phase 1b study, 13% (2/15) of patients who participated in the first half study showed evide 2024.

- In November 2023, we expect stable disease. The studies met the primary objective to begin to draw down funds available under the 2023 Loan Agreement. We expect to draw on the loan over the next ten months, up to the maximum loan amount of $26.3 million. The proceeds of this loan will b used primarily for the renovation of our new headquarters, including upgraded research laboratories and determine a new manufacturing facility, and t repayment of borrowings under the 2022 Loan Agreement incurred as acquisition financing for the purchase of the property. A portion of the proceeds the loan will be used to recoup the $4.4 million advanced from our operating capital for the building project prior to accessing funds available under th 2023 Loan Agreement. recommended Phase 2 dose ("RP2D").
- In August 2023, February 2024, we entered into an agreement with University of Pittsburgh Medical Center ("UPMC") to conduct an Investigator-spon Phase 2 clinical trial to evaluate HCW9218 in patients with metastatic advanced stage ovarian cancer in combination with neoadjuvant chemotherapy Patient enrollment is expected to begin in the Company was granted two patents: second half of 2024.
- o • U.S. Patent No. 11,730,762 We intend modify the protocol for a randomized Phase 2 clinical trial led by the United States Patent and Trademark Offic operating under our existing CRADA, to evaluate HCW9218 in the treatment of advanced pancreatic cancer in combination with standard-of-care

chemotherapy. All five clinical sites from the Phase 1b portion of this study expect to continue to participate in the Phase 2 study.

- In the coming year, we are considering expanding our clinical studies to other age-related indications beyond cancer, some of which contains claims for may be secondary endpoints of studies in cancer indications. We are focused on senescent cell associated skin disorders.
- We are preparing an IND application to evaluate HCW9302 in an autoimmune disease, which we plan to submit in the third quarter of 2024. There can be no assurance that the FDA will authorize us to initiate our planned clinical trials on a method timely basis, or at all. In the event we do not receive feedback on a timely basis, or we are required to promote change the activation and proliferation of NK cells or T cells. The patented method is based on contacting the NK cells or T cells in a liquid culture medium with one design of our proprietary molecules, all which are constructed with a tissue factor domain and created using our TOBI™ discovery platform, and an antibody construct that binds to the molecule's tissue factor domain. The method covered by this patent encompasses three clinical protocol or address other feedback, clinical development of our proprietary immunotherapeutic molecules. products would be delayed and our costs may increase.

o U.S. Patent No. 11,738,052 by the United States Patent and Trademark Office which contains claims for a method of promoting the activation and proliferation of NK cells, known as our "prime and expand" method. The patented method is based on contacting NK cells in a liquid culture medium with an antibody construct and two of our proprietary immunotherapeutic molecules, both of which were created using the Company's TOBI™
discovery platform.

Trends and Uncertainties

Inflationary Cost Environment, Geopolitical Risks Banking Crisis, Supply Chain Disruption and Other the Macroeconomic Factors Environment

The Company's Our operations have been affected by many headwinds, including inflationary pressures, rising interest rates, ongoing global supply chain disruptions resulting from increased geopolitical tensions such as the war between Russia and Ukraine, the war in the Middle East, the conflict between Russia and Ukraine, Chinese aggression towards Taiwan, China-Taiwan relations, financial market volatility and currency movements. The Company has These headwinds, specifically the supply chain disruptions, have adversely impacted our ability to procure certain services and materials, which in some cases impacts the cost and timing of clinical trials and IND-enabling activities. In addition, we have been impacted by inflation and may continue to be so, especially when procuring materials required for the buildout of our new headquarters, the costs for recruiting and retaining employees and other employee-related costs. Management employs Further, rising interest rates have also increased borrowing costs. The Company uses a number of strategies to effectively navigate these issues, including product redesign, alternate sourcing, and establishing contingencies in budgeting and timelines. Future developments in these and other areas, such as However, the Company's ongoing legal proceedings, present material uncertainty and risk with respect to the Company's clinical trials, IND-enabling activities, buildout of the new headquarters, as well as the Company's financial condition and results of operations. The extent and duration of such events and conditions, and resulting disruptions to our operations, are highly unpredictable.

For discussion of risks related to potential impacts of supply chain, inflation, geopolitical and macroeconomic challenges on our operations, business results and financial condition, see Part II, Item 1A. - "Risk Factors" in the Company's Annual Report.

Components of our Results of Operation

Revenues

We have no products approved for commercial sale and have not generated any revenue from commercial product sales of internally-developed immunotherapeutic products for the treatment of cancer and other age-related diseases. The principal source of our revenues to date have been generated from our Wugen License and Master Services Agreement (the "MSA") with Wugen. See Note 1 to our condensed interim financial statements included elsewhere in this Quarterly Report for these definitions and more information.

We derive revenue from a license agreement granting rights to Wugen to further develop and commercialize products based on two of our internally-developed molecules. Consideration under our contract included a nonrefundable upfront payment, development, regulatory and commercial milestones, and royalties based on net sales of approved products. Additionally, HCW Biologics retained manufacturing rights and has agreed to provide Wugen with clinical and research grade materials for clinical development and commercialization of licensed products under separate agreements. We assessed which activities in the Wugen License should be considered distinct performance obligations that should be accounted for separately. We develop assumptions that require judgement to determine whether the license to our intellectual property is distinct from the research and development services or participation in activities under the Wugen License.

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Performance obligations relating to the granting a license and delivery of licensed product and R&D know-how were satisfied when transferred upon the execution of the Wugen License on December 24, 2020. The Company recognized revenue for the related consideration at a point in time. The revenue recognized from a transaction to supply clinical and research grade materials entered into under the MSA and covered by a statement-of-work Statement of Work ("SOW"), represents one performance obligation that is satisfied over time. The Company recognizes revenue generated for supply of material for clinical development using an input method based on the costs incurred relative to the total expected cost, which determines the extent of the Company's progress toward completion.

Operating Expenses

Our operating expenses are reported as research and development expenses and general and administrative expenses.

Research and Development

Our research and development expenses consist primarily of costs incurred for the development of our product candidates, which include:

- Employee-related expenses, including salaries, benefits, and stock-based compensation expense;
- Expenses related to manufacturing and materials, consisting primarily of expenses incurred primarily in connection with CMOs which produce cGMP materials for clinical trials on our behalf;
- Expenses associated with preclinical activities, including research and development and other IND-enabling activities;
- Expenses incurred in connection with clinical trials; and

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- Other expenses, such as facilities-related expenses, direct depreciation costs for capitalized scientific equipment, and allocatio for overhead.

We expense research and development costs as they are incurred. Costs for contract manufacturing are recognized based on an evaluation of the progress to completion of specific tasks using information provided to us by our vendors. Payments for these activities are based on the terms of the agreement, and the pattern of payments for goods and services will change depending on the material. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses and expensed as the related goods are delivered or the services are performed.

We expect research and development expenses to increase substantially for the foreseeable future as we continue the development of our product candidates. We cannot reasonably determine the nature, timing, and costs of the efforts that will be necessary to complete the development of, and obtain regulatory approval for, any of our product candidates. Product candidates in later stages of development generally have higher development costs than those in earlier stages. See "Risk Factors -- Risks Related to the Development and Clinical Testing of Our Product Candidates," in our Annual Report for the year ended December 31, 2022 filed with the SEC on March 28, 2023 for a discussion of some of the risks and uncertainties associated with the development and commercialization of our product candidates. Any changes in the outcome of any of these risks and uncertainties with respect to the development of our

product candidates in preclinical and clinical development could mean a significant change in the costs and timing associated with the development of these product candidates. For example, if the FDA or another regulatory authority were to delay our planned start of clinical trials or require us to conduct clinical trials or other testing beyond those that we currently expect or if we experience significant delays in enrollment in any of our planned clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development of that product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of employee-related expenses, including salaries, related benefits, and stock-based compensation expense for employees in the executive, legal, finance and accounting, human resources, and other administrative functions. General and administrative expenses also include third-party costs such as insurance costs, fees for professional services, such as legal, auditing and tax services, facilities administrative costs, and other expenses.

During the period ended December 31, 2022, Altor/NantCell, a former employer of Dr. Hing C. Wong, our Founder and Chief Executive Officer, initiated legal proceedings against Dr. Wong and the Company. On April 26, 2023, the parties stipulated that Altor/NantCell's action against the Company would be consolidated with the Altor/NantCell arbitration demand against Dr. Wong. On April 27, 2023, the U.S. District Court for the Southern District of Florida (the "Court") with jurisdiction over lawsuit against the Company approved the parties' stipulation and ordered the parties to arbitration. On May 1, 2023, Altor/NantCell filed a demand against the Company before JAMS. On May 3, 2023, Altor/NantCell dismissed the federal court action without prejudice and the Court ordered the case dismissed without prejudice and closed the case. Altor/NantCell's proceeding against the Company is now proceeding in arbitration before JAMS. JAMS and is consolidated with the arbitration Altor/NantCell initiated against Dr. Wong. The arbitration hearing is scheduled to begin on May 20, 2024. In connection with claims brought against Dr. Wong, Altor/NantCell has advancement obligations to him for claims brought against him. Thus, him and is currently advancing half of Dr. Wong's legal expenses incurred by him in connection with his arbitration will be advanced by Altor/NantCell; however, under certain circumstances, fees while the Company may be required advances the other half of Dr. Wong's legal fees; however, Altor/NantCell is seeking reimbursement of all the legal fees and expenses it has advanced to advance his legal fees. Dr. Wong. The Company also has incurred legal expenses on its own behalf in the period ended September 30, 2023 March 31, 2024, and we expect to continue to incur material costs and expenses in connection with defending the Company in the foregoing legal matters through the end third quarter of 2023 and into 2024.

We expect general and administrative expenses incurred in the normal course of business for other purposes, such as costs for recruitment and retention of personnel, service fees for consultants, advisors and accountants, as well as costs to comply with government regulations, corporate governance, internal control over financial reporting, insurance and other requirements for a public company, to continue to increase for the foreseeable future as we scale our operations.

Interest Expense and

Interest expense includes interest paid on debt.

Other (Expense) Income, Net

Interest expense reflects the interest paid for loans. Other (expense) income, net consists of interest earned on our cash, cash equivalents, unrealized and realized gains and losses related to our investments in U.S. government-backed securities, and other income and expenses related to non-operating activities, and miscellaneous non-operating expenses.

Income related to non-operating activities includes rent earned under a short-term, market rate lease, which the Company entered into with the former owner of the building purchased by the Company on August 15, 2022. The lease provided the former owner with the right to occupy offices that comprise approximately 15,000 square feet of the building for a period of one year, ending August 14, 2023, which the Company agreed to extend to September 30, 2023. During the three and nine months ended September 30, 2023, the Company reported rental income of $60,003 and $178,910, respectively, which is included within Other (expense) income, net in the interim condensed statement of operations.

activities.

Results of Operations

	Three Months Ended September 30,		Nine Months Ended September 30,		Three Months Ended March 31,	
	2022	2023	2022	2023	2023	2024
Revenues:						
Revenues	$ 1,809,025	$ 853,102	$ 5,380,570	$ 1,517,792	$ 41,883	$ 1,126,712
Cost of revenues	(1,447,220)	(678,325)	(3,062,496)	(1,210,077)	(29,350)	(511,965)
Net revenues	361,805	174,777	2,318,074	307,715	12,533	614,747
Operating expenses:						
Research and development	2,648,794	1,667,442	6,408,353	5,539,919	2,255,813	2,123,284
General and administrative	1,732,666	3,585,215	5,321,262	9,716,765	3,117,290	5,985,126
Total operating expenses	4,381,460	5,252,657	11,729,615	15,256,684	5,373,103	8,108,410
Loss from operations	(4,019,655)	(5,077,880)	(9,411,541)	(14,948,969)	(5,360,570)	(7,493,663)
Interest expense	(32,184)	(95,514)	(32,184)	(284,465)	(93,438)	—
Other (expense) income, net	137,645	234,753	(38,237)	919,688	383,322	25,602
Net loss	$ (3,914,194)	$ (4,938,641)	$ (9,481,962)	$ (14,313,746)	$ (5,070,686)	$ (7,468,061)

Comparison of the Three Months ended September 30, 2022 March 31, 2023 and September 30, 2023 March 31, 2024

Revenues

The Company recognized $1.8 million revenues of $41,883 and $853,102 of revenues $1.1 million for the three months ended September 30, 2022 March 31, 2023 and 2024, respectively. Revenues were derived exclusively from the sale of licensed molecules to Wugen. The increase in revenues is primarily attributable to Wugen limiting its purchases in 2023, respectively. All revenues were generated under due mainly to changes in its clinical development program and delays in ramping up its manufacturing process. Under the development terms of the supply agreement with our licensee, Wugen. Revenue was recognized for all transactions made under SOWs pursuant to our existing MSA, since a contract existed for these transactions between Wugen and all of the other conditions for revenue recognition were met under Topic 606. For those transactions for which revenue was not recognized because one or more of the criteria for revenue recognition had not been met, the Company, records deferred revenue. There were no deferred revenues as the Company earns an industry-standard gross margin. Occasionally, Wugen acquires product which is part of September 30, 2022 or September 30, 2023. inventory we made for our own use. In these instances, we do not apply the standard costs since the cost of manufacturing these materials would have already been expensed in a prior period.

Research and Development Expenses

The following table summarizes our research and development expenses for the three months ended September 30, 2022 March 31, 2023 and September 30, 2023 March 31, 2024:

	Three Months Ended September 30,				Three Months Ended March 31,			
	2022	2023	$ Change	% Change	2023	2024	$ Change	% Change
Salaries, benefits and related expenses	$ 693,774	$ 692,607	$ (1,167)	NM	744,465	$ 779,747	$ 35,282	5%
Manufacturing and materials	751,945	206,150	(545,795)	(73)%	284,905	576,301	291,396	102%
Preclinical expenses	729,172	306,344	(422,828)	(58)%	737,686	285,091	(452,595)	(61)%
Clinical trials	292,276	343,821	51,545	18%	246,358	266,640	20,282	8%
Other expenses	181,627	118,520	(63,107)	(35)%	242,399	215,505	(26,894)	(11)%
Total research and development expenses	**$ 2,648,794**	**$ 1,667,442**	**$ (981,352)**	(37)%	**$ 2,255,813**	**$ 2,123,284**	**$ (132,529)**	(6)%

NM - Not meaningful

Research and development expenses decreased by $981,352, $132,529, or 37% 6%, from $2.6 million $2.3 million for the three months ended September 30, 2022 March 31, 2023 to $1.7 million $2.1 million for the three months ended September 30, 2023 March 31, 2024. This The decrease was primarily due to a decline in expenses for manufacturing and preclinical activities, and allocation for depreciation expense, expenses, partially offset by an increase in clinical trials manufacturing and materials expenses.

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Salaries, benefits, and related expenses increased by $35,282, or 5%, from $744,465 for the three months ended March 31, 2023 to $779,747 for the three months ended March 31, 2024. This increase was primarily attributable to a $27,234 increase in salaries and a $6,711 increase in benefits.

Manufacturing and materials expense decreased increased by $545,795, $291,396, or 73% 102%, from $751,945 $284,905 for the three months ended September 30, 2022 March 31, 2023 to $206,150 $576,301 for the three months ended September 30, 2023 March 31, 2024. In the three months ended September 30, 2022 March 31, 2023, expenses costs were primarily costs associated with a 200L cGMP run of HCW9302. In the three months ended March 31, 2024, costs were primarily attributable to the initiation costs of a 1000L GMP production and materials related to manufacturing run for HCW9218. As the high producing cell-line of September 30, 2023, the Company anticipated that adequate supply of clinical development material for the Company's two lead molecules, HCW9218 and HCW9302, had been put in place for clinical development activities planned for the next 20-24 months. In the three months ended September 30, 2023, costs were incurred primarily for master cell bank characterization for HCW9101H, a high-producing cell line of a key component of the manufacturing process for the Company's proprietary molecules including those licensed to Wugen, as well as ancillary activities such as shipping, insurance and storage. HCW9101.

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Expenses associated with preclinical activities decreased by $422,828, $452,595, or 58% 61%, from $729,172 $737,686 for the three months ended September 30, 2022 March 31, 2023 to $306,344 $285,091 for the three months ended September 30, 2023 March 31, 2024. In For the three months ended September 30, 2022 March 31, 2023, expenses were attributable related primarily to the cost of toxicology studies and experimental materials related to IND-enabling activities required to prepare our IND for Phase 1b/2 clinical trials trial to evaluate HCW9302 in an autoimmune indication. In the three months ended September 30, 2023 March 31, 2024, costs toxicology and other IND-enabling studies were incurred primarily for additional studies required for submission winding down, as we prepare to submit the IND application in the third quarter of the HCW9302 IND. 2024.

Expenses associated with clinical activities increased by $51,545, $20,282, or 18% 8%, from $292,276 $246,358 for the three months ended September 30, 2022 March 31, 2023 to $343,821 $266,640 for the three months ended September 30, 2023 March 31, 2024. The increase in costs was primarily due to attributable a $122,838 $100,248 increase in the expenses associated with correlative studies and R&D collaborations, partially offset by a $79,966 decrease in patient fees and other clinical trial fees, partially offset by a $84,152 decrease costs.

Subject to our ability to successfully execute our plans to obtain bridge financing, we anticipate expenses related to clinical activities will increase substantially in the future, as we enter Phase 2 clinical site start-up costs. In the three months ended September 30, 2022, the Company had one ongoing Phase 1 clinical trial trials to evaluate HCW9218 in solid tumors, sponsored by the University of Minnesota ("UMN"), which initiated in May 2022. In the three months ended September 30, 2023, there were two ongoing clinical studies: ovarian and pancreatic cancer, as well as other indications. The UMN study and a Company-sponsored first Phase 1b 2 clinical trial to open is at UPMC, who will sponsor a randomized study in which one arm will evaluate HCW9218 in chemo-resistant/chemo-refractory pancreatic cancer, which initiated in October 2022.

In the three months ended September 30, 2023, the UMN trial completed dose escalation and began enrollment in the cohort expansion at the highest planned dose level. A human data readout was presented at the 2024 SITC conference, showing clinical safety and tumor response endpoints and results of correlative studies for 15 patients with heavily pretreated metastatic advanced solid tumors. These results supported the anti-cancer utility of HCW9218 and provided the rationale for future Phase 2 clinical trials using HCW9218 stage ovarian cancer in combination with standard-of-care cancer treatments. There has been one dose limiting toxicity event among neoadjuvant chemotherapy. Designed as a randomized trial, the patients participating primary objectives of this study are to evaluate the safety and tolerability of HCW9218 with chemotherapy and the efficacy of the combined regimens in the study, terms of complete pathologic response rate. If we are unable to complete planned business development and capital-raising transactions, we may have to curtail or cease operations.

Other expenses, which did not disrupt this patient's continued participation in the study. The Company expects the UMN study to be complete in the fourth quarter of 2023. Clinical expenses include overhead allocations, decreased by $26,894, or 11%, from $242,399 for the three months ended September 30, 2023 also include expenses related March 31, 2023 to $215,505 for the three months ended March 31, 2024. This decrease is primarily attributable to a Company-sponsored, multi-center Phase 1b/2 clinical trial to evaluate HCW9218 $30,527 decrease allocation of depreciation, a $4,336 decrease in advanced pancreatic cancer. Patient recruitment continues to progress at the five clinical sites, led by the National Cancer Institute. The trial completed three dose escalation cohorts travel and has begun travel-related expenses and a fourth, with no dose-limiting toxicity to date. We expect to complete the Phase 1b portion of the pancreatic cancer study $8,503 decrease in late 2023 or early 2024, followed expenses for equipment and supplies, partially offset by a human data readout of clinical data expected $14,489 increase in the first half of 2024. repairs and maintenance.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the three months ended September 30, 2022 March 31, 2023 and September 30, 2023 March 31, 2024:

	Three Months Ended September 30,			
	2022	2023	$ Change	% Change
Salaries, benefits and related expenses	$ 779,713	$ 775,956	$ (3,757)	NM

Professional services	352,166	2,283,094	1,930,928	548%
Facilities and office expenses	85,661	175,694	90,033	105%
Depreciation	31,939	63,083	31,144	98%
Rent and occupancy expense	31,217	36,372	5,155	17%
Other expenses	451,970	251,016	(200,954)	(44)%
Total general and administrative expenses	**$ 1,732,666**	**$ 3,585,215**	**$ 1,852,549**	107%

NM - Not meaningful

	Three Months Ended March 31,			
	2023	2024	$ Change	% Change
Salaries, benefits and related expenses	$ 819,778	$ 521,610	$ (298,168)	(36)%
Professional services	1,707,588	4,772,840	3,065,252	180%
Facilities and office expenses	122,221	203,599	81,378	67%
Depreciation	69,213	67,081	(2,132)	(3)%
Rent and occupancy expense	42,159	42,716	557	1%
Other expenses	356,331	377,280	20,949	6%
Total general and administrative expenses	**$ 3,117,290**	**$ 5,985,126**	**$ 2,867,836**	92%

General and administrative expenses increased by $1.9 million $2.9 million, or 107% 92%, from $1.7 million $3.1 million for the three months ended September 30, 2022 March 31, 2023 to $3.6 million $6.0 million for the three months ended September 30, 2023 March 31, 2024. The increase was primarily due to an increase in professional fees, which includes legal fees associated with the proceedings brought against the Company by Altor/NantCell, matter. partially offset by a decrease in salaries, benefits and related expenses.

Salaries, benefits and related expenses did not have decreased by $298,168, or 36%, from $819,778 for the three months ended March 31, 2023 to $521,610 for the three months ended March 31, 2024. The decrease was primarily attributable to a meaningful net change. The components of the change consisted of a $55,547 increase $299,174 decline in salaries and wages, a $21,606 increase in employee benefits, partially offset by a $80,580 decrease in expenses arising from stock-based performance-related bonus compensation.

Professional services increased by $1.9 million $3.1 million, or 548% 180%, from $352,166 $1.7 million for the three months ended September 30, 2022 March 31, 2023 to $2.3 million $4.8 million for the three months ended September 30, 2023 March 31, 2024. Professional services include corporate legal services, expenses related to the legal actions brought by Altor/NantCell, matter, legal fees associated with patent prosecution, and other professional services, such as auditing and tax advisory fees. The $1.9 million increase consists of a $2.0 million increase in For the three months ended March 31, 2023, the Company incurred $1.1 million for legal fees associated in connection with the Altor/NantCell matter, $359,754 for legal fees in connection to procuring patents, and a $18,196 increase $233,007 in fees associated with other professional services, such as audit services. For the three months ended March 31, 2024, the Company incurred $4.1 million for legal fees in connection with the Altor/NantCell matter, $168,344 for legal fees in connection to procuring patents, and tax advisory services, partially offset by a $58,479 decrease $185,462 in legal fees associated with patent prosecution. other professional services. We expect to continue to incur material costs and expenses in connection with defending the Company in the Altor/NantCell matter through the third quarter of 2024.

Facilities and office expenses increased by $90,033, $81,378, or 105% 67%, from $85,661 $122,221 for the three months ended September 30, 2022 March 31, 2023 to $175,694 $203,599 for the three months ended September 30, 2023. The increase was March 31, ,2024, primarily due to a $77,598 $67,518 increase in IT-related expenses software and other licensing fees and a $10,291 $16,960 increase in facility-related expenses. facilities expenses such as electricity and waste.

Depreciation allocation to general and administrative Other expenses increased by $31,144, $20,949, or 98% 6%, from $31,939 $356,331 for the three months ended September 30, 2022 March 31, 2023 to $63,083 $377,280 for the three months ended September 30, 2023. The increase in the depreciation allocation to general and administrative expenses is related to the Company's acquisition of a property for its new headquarters in the third quarter of 2022.

Other expenses decreased by $200,954, or 44%, from $451,970 for the three months ended September 30, 2022 to $251,016 for the three months ended September 30, 2023. The decrease consists primarily of a $151,576 decrease in costs for filing fees, as the shelf registration filing in August 2022 did not recur during the three months ended September 30, 2023, and a $85,510 decrease in insurance premiums, partially offset by a $33,572 increase in taxes.

Comparison of the Nine Months ended September 30, 2022 and September 30, 2023

Revenues

The Company recognized $5.4 million and $1.5 million of revenues for the nine months ended September 30, 2022 and 2023, respectively. All revenues were generated under the development supply agreement with Wugen. The decline in revenue is attributed to a change in Wugen's clinical development plan, a delay in the ramp up of its manufacturing process, as well as transactions for which not all of the elements for revenue recognition were met. The revenue recognized in the nine months ended September 30, 2022 reflects recognition of revenues that had previously been classified as deferred revenue. Revenue may be recognized for all transactions made under the MSA for which the Company entered SOWs, since both of these elements must be in place for a contract to exist and to fulfill all of the other conditions required for revenue recognition under Topic 606. For those transactions for which revenues were not recognized because one or more of the criteria for revenue recognition had not been met under Topic 606, the Company records deferred revenue. There were no deferred revenues as of September 30, 2022 and September 30, 2023.

Research and Development Expenses

The following table summarizes our research and development expenses for the nine months ended September 30, 2022 and September 30, 2023:

	Nine Months Ended September 30,			
	2022	2023	$ Change	% Change
Salaries, benefits and related expenses	$ 2,268,755	$ 2,195,265	$ (73,490)	(3)%
Manufacturing and materials	1,273,902	623,785	(650,117)	(51)%
Preclinical expenses	1,841,809	1,367,725	(474,084)	(26)%
Clinical trials	486,992	788,116	301,124	62%
Other expenses	536,895	565,028	28,133	5%
Total research and development expenses	**$ 6,408,353**	**$ 5,539,919**	**$ (868,434)**	(14)%

Research and development expenses decreased by $868,434, or 14%, from $6.4 million for the nine months ended September 30, 2022 to $5.5 million for the nine months ended September 30, 2023. This decrease was primarily due to a decrease in manufacturing and preclinical expenses, partially offset by an increase in clinical trials expenses.

Salaries, benefits, and related expenses decreased by $73,490, or 3%, from $2.3 million for the nine months ended September 30, 2022 to $2.2 million for the nine months ended September 30, 2023. This decrease was primarily attributable to an allocation of labor costs for manufacturing of clinical materials for Wugen and the impact of the reimbursement of expenses provided for under the Wugen License.

Manufacturing and materials expense decreased by $650,117, or 51%, from $1.3 million for the nine months ended September 30, 2022 to $623,785 for the nine months ended September 30, 2023. In the nine months ended September 30, 2022, costs were primarily attributable to HCW9302 technology transfer and development process closeout through finalization of reports and the project initiation and production costs for a 1000L GMP manufacturing run for HCW9218. In the nine months ended September 30, 2023, costs were incurred primarily for production activities associated with the master cell bank characterization for HCW9101H; a 200L cGMP manufacturing run of HCW9302; and ancillary activities such as shipping, insurance and storage.

Expenses associated with preclinical activities decreased by $474,084, or 26%, from $1.8 million for the nine months ended September 30, 2022 to $1.4 million for the nine months ended September 30, 2023. In the nine months ended September 30, 2022, expenses were related primarily to the cost of toxicology studies and experimental materials used for IND-enabling activities required to prepare our IND for clinical trials to evaluate HCW9302 in an autoimmune indication. In the nine months ended September 30, 2023, costs were incurred to complete the toxicology study and for additional studies required for submission of the HCW9302 IND.

Expenses associated with clinical activities increased by $301,124, or 62%, from $486,992 for the nine months ended September 30, 2022 to $788,116 for the nine months ended September 30, 2023. In the nine months ended September 30, 2022, the UMN study was the only ongoing clinical trial. In the nine months ended September 30, 2023, in addition to the UMN study, there was an ongoing Company-sponsored Phase 1b clinical trial to evaluate HCW9218 in chemo-refractory/chemo-resistant pancreatic cancer.

General and Administrative Expenses

The following table summarizes our general and administrative expenses for the nine months ended September 30, 2022 and September 30, 2023:

	Nine Months Ended September 30,			
	2022	2023	$ Change	% Change
Salaries, benefits and related expenses	$ 2,237,841	$ 2,408,622	$ 170,781	8%
Professional services	1,098,530	5,618,898	4,520,368	411%
Facilities and office expenses	299,595	439,373	139,778	47%
Depreciation	84,484	188,454	103,970	123%
Rent expense	96,493	118,296	21,803	23%
Other expenses	1,504,319	943,122	(561,197)	(37)%
Total general and administrative expenses	**$ 5,321,262**	**$ 9,716,765**	**$ 4,395,503**	83%

General and administrative expenses increased by $4.4 million, or 83%, from $5.3 million for the nine months ended September 30, 2022 to $9.7 million for the nine months ended September 30, 2023. The increase was primarily due to a $4.5 million increase in professional fees, consisting of a $4.3 million increase in legal fees associated with the Altor/NantCell matter, a $224,201 increase in legal fees associated with patent prosecution, and a $92,921 increase for other professional services such as audit fees and tax advisory fees.

Salaries, benefits and related expenses increased by $170,781, or 8%, from $2.2 million for the nine months ended September 30, 2022 to $2.4 million for the nine months ended September 30, 2023March 31, 2024. The increase is primarily attributable to a $188,224an increase of $147,525 in salaries and wages, a $40,887 increase in financing expenses, for health insurance premium for employee benefits, and a $20,165 increase in payroll tax expense, partially offset by a $94,041$57,337 decrease in stock-based compensation expense. insurance-related costs and a $74,093 decrease in Delaware franchise taxes.

Professional services increased by $4.5 million Interest Expense

On August 15, 2022, or 411%, we entered into a loan and security agreement with Cogent Bank to partially fund our purchase of the property we acquired on that same date. We borrowed $6.5 million under this agreement. Amounts outstanding on the loan accrue interest at a rate per annum equal to 5.75%. We were obligated to make interest-only payments on this loan from $1.1 million September 2022 through August 2023 and principal and interest payments in 47 equal monthly installments, based on a 25-year maturity schedule,

commencing September 15, 2023. We paid $93,438 and $93,789 in cash for interest for the nine three months ended September 30, 2022 to $5.6 million for March 31, 2023 and 2024, respectively. For the nine three months ended September 30, 2023. The $4.5 million increase consists of a $4.3 million increase in legal fees associated with March 31, 2023, interest was expense. For the Altor/NantCell matter, a $224,201 increase for legal fees associated with patent prosecution, and a $92,921 increase in fees associated with other professional services such as audit fees and tax advisory services, partially offset by a $117,492 decrease in fees for consulting and advisory services. three months ended March 31, 2024, interest was capitalized.

Facilities and office expenses increased by $139,778, or 47%, from $299,595 for the nine months ended September 30, 2022 to $439,373 for the nine months ended September 30, 2023. This increase was primarily due to a $84,353 increase in IT-related expenses and a $45,222 increase in facilities expenses.

Depreciation allocation to general and administrative expenses increased by $103,970, or 123%, from $84,484 for the nine months ended September 30, 2022 to $188,454 for the nine months ended September 30, 2023. The increase in the depreciation allocation to general and administrative expenses reflects the Company's acquisition of a property for its new headquarters in the third quarter of 2022.

Other expenses Income, Net

Other income, net decreased by $561,197, or 37%, from $1.5 million $383,322 for the nine three months ended September 30, 2022 March 31, 2023, to $943,122 $25,602 for the nine three months ended September 30, 2023 March 31, 2024. The decrease is primarily due attributable to a $527,306 decrease interest earned for money market deposits and unrealized gains for investments in U.S. government-backed securities. In addition, for the three months ended March 31, 2023, Other income included rental income. On August 15, 2022, the Company entered into a short-term, market-rate lease with the former owner of the building we purchased on the same date, which terminated in the insurance premiums and a $133,639 decrease in costs year ended December 31, 2023. We received rental income of $59,453 for filing, as the shelf registration filing in August 2022 did not recur during the nine three months ended September 30, 2023, partially offset by a $115,124 increase in taxes. March 31, 2023.

Liquidity and Capital Resources

Sources of Liquidity

As of September 30, 2023 March 31, 2024, our principal source of liquidity was $11.2 million $4.1 million in cash and cash equivalents, and a $5.3 million deposit for interest reserve. Since inception, our principal sources of liquidity have been $49.2 million in net proceeds from our initial public offering, a $6.5 million bank loan there was substantial doubt over whether the Company had sufficient capital to operate for the acquisition next twelve months from the issuance date of a property this Quarterly Report based on this liquidity. We considered elements of our financing plan that were probable and likely to be implemented within the Company will use as its new headquarters; next year, and a $26.3 million loan we concluded such financing plans were not sufficient to finance to renovate mitigate the substantial doubt in our new headquarters. The Company intends to raise capital through additional debt or equity financings. In addition, we intend to continue our efforts to enter into business development transactions. Business development efforts are focused on out-licensing rights to non-core assets or regional markets, third-party collaboration funding, cooperative agreements for clinical trials, and other transactions. However, if we are not able to obtain financing at adequate levels, we will need to reevaluate its operating plan and may be required to delay the development of some of its products. going concern analysis.

On August 15, 2022, we purchased a 36,000 square foot building located in Miramar, Florida for approximately $10.1 million, including transaction costs. A portion of the acquisition cost was funded with a $6.5 million five-year loan, obtained from Cogent Bank (the "2022 Loan Agreement") and is secured by the building. The remainder of the purchase price was funded with cash. Amounts borrowed under the term facility have a fixed interest rate of 5.75%, with interest only payments required for the first year and 25-year amortization thereafter. There is no prepayment penalty. As of September 30, 2023 March 31, 2024, a balance of [$6.4] million remains due for this obligation, [$6.3] million of which is classified as a noncurrent liability included in Debt, net in the Company owed $6.5 million on balance sheet included in the 2022 Loan Agreement and was interim financial statements included in this Quarterly Report. As of March 31, 2024, we were in compliance with all covenants thereunder.

On April 21, 2023, under the Company entered into the 2023 Loan Agreement with Prime Capital Ventures, LLC ("Prime"), pursuant to which Prime will advance loans to the Company in a principal amount not to exceed $26.3 million pursuant to a loan agreement (the "2023 Loan Agreement") with a scheduled maturity of April 20, 2028 (the "Prime Maturity Date"). In November 2023, the Company expects to begin to draw down funds under the 2023 Loan Agreement. We expect to draw on the loan over the next ten months,

up to the maximum loan amount of $26.3 million. Some of the proceeds of the loan will be used to recoup $4.4 million in funds advanced from the Company's operating capital for the building project prior to drawing funds available under the 2023 Loan Agreement.

The Company has the option to terminate the 2023 Loan Agreement prior to the Prime Maturity Date. The note issued pursuant to the 2023 Loan Agreement bears interest of 7.00% per annum, due monthly in arrears on the first day of each month. The primary use for borrowings under the 2023 Loan Agreement is to obtain the funding required to complete the buildout of the Company's new headquarters, including improved research laboratories, a vivarium, and a manufacturing facility. related documents.

Under Since the 2023 Loan Agreement, year end, we raised $6.1 million in financings. On February 20, 2024, we completed a $2.5 million private placement of common stock in which we sold an aggregate of 1,785,718 shares to certain of our officers and directors, at a purchase price of $1.40 per share. As of March 31, 2024, we received $2.0 million from the Company was required issuance of Secured Notes, which were issued to fund

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certain of our officers and a reserve bank account controlled by Prime in the amount of $5.3 million, with the purpose to fund the interest due on outstanding amounts under the 2023 Loan Agreement. The balance member of the reserve account is presented in Deposit for interest reserve in noncurrent assets on the accompanying condensed balance sheet. As Board of September 30, 2023 Directors, as well as other investors. On May 13, 2024, the Company had no borrowings under the 2023 Loan Agreement. The Company incurred $1.3 million in debt issuance costs in connection with a lender's fee, which is payable in equal installments from the first four draws from the 2023 Loan Agreement. We intend to repay the 2022 Loan Agreement in six equal installments from the first six draws Company's Founder and Chief Executive Officer purchased an additional $1.6 million of the 2023 Loan Agreement. We will not incur any prepayment penalties as a result of prepayment of the 2022 Loan Agreement. Secured Notes.

23 In a Current Report on Form 8-K filed with the SEC on May 1, 2024, we reported that we were the victim of a criminal scheme that resulted in a loss of $1.3 million and a default on a legally binding commitment to purchase $8.0 million of Secured Notes. Management is currently in discussions with the Audit Committee of the Company's Board of Directors to assess the effect of this incident and will work with management to establish a remediation plan. See Item 4. - "Controls and Procedures." The loss did not have any impact on the Company's financial position, results of operations or cash flows as of and for the three month period ended March 31, 2024.

Management has made some reductions in costs, but in order to continue the clinical development for our lead product candidates, we must maintain a core group of scientists. We continue to pursue our plan to obtain bridge financing through the issuance of up to $10.0 million in Secured Notes, $3.6 million of which have been issued to date in 2024. We anticipate this bridge financing, if fully subscribed, will allow us to reach such time as we can execute plans for business development transactions such as licenses for non-core assets and capital-raising transactions, although we cannot assure you of this outcome for many reasons, including uncertainties regarding the Company's ongoing arbitration proceedings with Altor/NantCell, as described in Part II., Item 1. - "Legal Proceedings." In addition to the bridge financing in the form of the sale of additional Secured Notes, other potential near-term financing plans may include cooperative agreements for clinical trials and third-party collaboration funding. If the Company is not successful in raising additional capital, management has the intent and ability to revise its business plan and reduce costs. If such revisions are insufficient, the Company may have to curtail or cease operations.

We believe that our cash and cash equivalents and short-term investments as of September 30, 2023 will be sufficient to meet our capital requirements and fund our operations for at least the next 12 months. We have based our projections of operation expenses requirements on assumptions, including our existing commitments and contingencies, that may prove to be incorrect, and we may use all of our available capital sooner than we expect. Because of the numerous risks and uncertainties associated with the clinical development and commercialization of immunotherapeutics, we are unable to estimate the exact amount of capital requirements to pursue these activities. Our funding requirements will depend on many factors, including, but not limited to:

- timing, progress, costs, and results of our ongoing preclinical studies and clinical trials of our immunotherapeutic products;
- impact of COVID-19 on the timing and progress of our IND-enabling activities, clinical trials and our ability to identify and enroll

patients;

- costs, timing, and outcome of regulatory review of our product candidates;
- number of clinical trials required for regulatory approval;
- whether we enter into any cooperative, collaboration or co-development agreements and the terms of such agreements;
- whether we raise additional funding through bank loan facilities, other debt arrangements, out-licensing or joint ventures, cooperative agreements or strategic collaborations;
- effect of competing technology and market developments;
- cost of maintaining, expanding, and enforcing our intellectual property rights;
- impact of arbitration, litigation, regulatory inquiries, or investigations, as well as costs to indemnify our officers and directors against third-party claims related to our patents and other intellectual property:
- cost and timing of buildout of new headquarters, including risks of cost overruns and delays, and ability to obtain additional financing, if needed; and
- costs and timing of future commercialization activities, including product manufacturing, marketing, sales, and distribution, for a of our product candidates for which we receive regulatory approval.

A change in the outcome of any of these or other factors with respect to the clinical development and commercialization of our product candidates could significantly change the costs and timing associated with the development of that product candidate.

Further, our operating plan may change, and we may need additional funds to meet operational needs and capital requirements for clinical trials and other research and development expenditures.

Comparison of the Cash Flows for the Nine Three Months Ended September 30, 2022 March 31, 2023 and September 30, 2023 March 31, 2024

The following table summarizes our cash flows for the nine three months ended September 30, 2022 March 31, 2023 and September 30, 2023 March 31, 2024:

	Nine Months Ended September 30,		Three Months Ended March 31,	
	2022	2023	2023	2024
Cash used in operating activities	$ (6,596,739)	$ (18,619,329)	$ (3,638,213)	$ (3,603,870)
Cash provided by investing activities	14,777,079	7,513,050		
Cash used in investing activities			(300,385)	(129,709)
Cash provided by financing activities	6,313,243	716	1,901	4,222,554
Net increase (decrease) in cash and cash equivalents	**$ 14,493,583**	**$ (11,105,563)**		
Net (decrease) increase in cash and cash equivalents			**$ (3,936,697)**	**$ 488,975**

Operating Activities

Net cash used in operating activities were $3.6 million for the three months ended March 31, 2023 and the three months ended March 31, 2024.

Cash used in operating activities for the nine three months ended September 30, 2022 March 31, 2023 consisted primarily of a net loss for the period of $9.5 million, a $222,555 $5.1 million and $112,500 unrealized loss on investments, net. The amount of cash decrease used in operating activities was partially offset by cash provided by operations arising from an a $718,675 increase accounts from Accounts payable and other liabilities, a $164,967 decrease in Accounts receivable, and a $202,979 cash decrease arising from a $182,294 decrease in accounts payable and other current liabilities. These uses were partially offset by $1.9 million of cash provided by a decrease in prepaid Prepaid expenses and other assets and assets. Further offsets were provided by noncash adjustments consisting of $834,003 for stock-based compensation expense and $456,696 for arising $298,847 from depreciation and amortization expense.

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and $259,206 from stock-based compensation.

Cash used in operating activities for the nine three months ended September 30, 2023 March 31, 2024 consisted primarily of a net loss for the period of $14.3 million $7.5 million, as well as a deposit $5.3 million used to establish an interest reserve for future interest payments, as required under the terms of the 2023 Loan Agreement. In addition, other uses of cash include a $292,383 increase in accounts receivable and a $251,008 increase in prepaid expenses and other current assets, partially offset by cash provided by from a $392,802 net $2.5 million increase in accounts from Accounts payable and other current liabilities. liabilities, a $631,873 decrease in Accounts receivable, and a $302,640 decrease in Prepaid expenses and other assets. Further offset to the use of cash resulted from net offsets were provided by noncash adjustments arising from an addback of $1.1 million, consisting primarily of $860,634 of cash provided by an adjustment $243,501 for depreciation and amortization $742,477 and an addback of cash provided by an adjustment for $244,685 from stock-based compensation, reduced by $248,445 of cash used for an adjustment for unrealized gains on investments. compensation.

Investing Activities

Cash provided used by investing investment activities for the nine three months ended September 30, 2022 March 31, 2023 consisted of $25.0 million $300,385 used for purchases of cash provided when short-term investments reached maturity, partially offset by $10.2 million of cash used to purchase property plant and equipment.

Cash used by investing investment activities for the nine three months ended September 30, 2023, March 31, 2024 consisted of $10.0 million $129,709 used for purchases of cash provided when short-term investments reached maturity, partially offset by $2.5 million of cash used to purchase property and equipment.

Financing Activities

Cash During the three months ended March 31, 2023, cash provided by financing activities for the nine months ended September 30, 2022 resulted primarily from obtaining the Cogent Loan, in the amount consisted of $6.5 million, to provide purchase financing to acquire our new headquarters building.

Cash provided by financing activities for the nine months ended September 30, 2023 resulted $1,901 from issuance of common stock upon exercise of vested employee stock options, options.

During the three months ended March 31, 2024, cash provided by financing activities consisted of an increase arising from a $2.5 million private placement of the Company's common stock and cash received from the issuance of $1.8 million of Secured Notes. Subsequent to March 31, 2024, a check for the remaining $250,000 cleared to bring the total of cash received from the issuance of senior secured notes to $2.0 million. The increase in cash provided by financing activities were partially offset by a principal repayment, as required under the 2022 Loan Agreement. $29,706 decrease arising from debt repayment.

Critical Accounting Policies, Significant Judgements and Use of Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our unaudited condensed interim financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgements about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe

that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgements and estimates.

Revenue Recognition

We recognize revenue under the guidance of Topic 606. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of Topic 606, we perform the following five steps: (i) identification of the contract(s) with the customer, (ii) identification of the promised goods or services in the contract and determination of whether the promised goods or services are performance obligations, (iii) measurement of the transaction price, (iv) allocation of the transaction price to the performance obligations, and (v) recognition of revenue when (or as) we satisfy each performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to our customer. See Note 1 to our condensed interim financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for more information.

Other than the above, there have been no material changes to our critical accounting policies and estimates from those described under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations— Critical Accounting Policies, Significant Judgements and Use of Estimates" in our Annual Report on Form 10-K for the year ended December 31, 2022, which was filed with the SEC on March 28, 2023.
Report.

Recent Accounting Pronouncements

See Note 1 to our unaudited condensed interim financial statements appearing elsewhere in this Quarterly Report for more information about recent accounting pronouncements.

Annual Report.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

As of September 30, 2023 March 31, 2024, we had cash and cash equivalents of $11.2 million $4.1 million including cash, cash equivalents and a deposit for interest reserve of $5.3 million. market investments. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. We are exposed to market risk related to the marketability of our Wugen common stock reported within Investments in the accompanying condensed interim balance sheet. Until such time as these shares become publicly traded, we will have limited access to liquidity for these securities.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our As of March 31, 2024, our management, with participation of our principal executive officer and principal financial officer, performed an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a – 15(e) under the Exchange Act). Based on that evaluation, two material weaknesses in the internal control over financial reporting (described below) were identified. Our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were not effective at the reasonable assurance level as of March 31, 2024.

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 us a company in the reports that we file it files or submit submits under the Exchange Act is are

recorded, communicated to our management to allow timely decisions regarding required disclosure, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Any disclosure Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective their objectives and our management necessarily applies its judgement judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) under the Exchange Act). Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, to provide reasonable assurance regarding the Chief Executive Officer, or CEO, reliability of financial reporting and Chief Financial Officer, or CFO, the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States.

As of March 31, 2024, our management assessed the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework. Based on this assessment, two material weaknesses over financial reporting were identified (described below). Our principal executive officer and principal financial officer concluded that our internal control over financial reporting was not effective as of March 31, 2024.

In a Current Report on Form 8-K filed with the SEC on May 1, 2024, we conducted an evaluation became aware that we were the victim of a criminal scheme involving the impersonation of a purchaser of Secured Notes upon the default on a legally binding commitment to purchase Secured Notes. The scheme resulted in the misdirection of approximately $1.3 million held in Company accounts to a fraudulent account controlled by a third party and a default on a legally binding commitment to purchase $8.0 million of Secured Notes. As a result of the default and the related misdirection of funds, management re-evaluated the effectiveness of our disclosure controls and procedures as such term is defined under Rules 13a-15(e) and 15d-15(e) under the Exchange Act, internal control over financial reporting as of September 30, 2023 December 31, 2023. Based on that evaluation, this assessment, management identified material weaknesses in two areas, including the CEO methods used to review, evaluate and CFO have concluded that, accept financing proposals from investors and lenders and the process used to enter unusual significant transactions. These material weaknesses remained unremediated as of March 31, 2024. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such date, that a reasonable possibility exists that a material misstatement of our disclosure annual or interim financial statements would not be prevented or detected on a timely basis. There was no impact on the financial position, results of operations and cash flows as a result of the material weaknesses.

Remediation Plans for Material Weakness in Internal Control over Financial Reporting

We are committed to establishing and maintaining a strong internal control environment. In response to the identified material weakness as described above, the Company's Board of Directors and its Audit Committee are conducting an internal investigation to determine the root cause of the material weaknesses, with advice from outside advisors. Upon conclusion of this investigation, they will work with management to evaluate internal controls over financial reporting based on criteria set forth in "Internal Control – Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Remediation plans being considered include, but are not limited to, adjusting authorization thresholds for unusual or significant transactions, enhancing the Company's due diligence procedures in connection with vetting of potential financial transactions with investors and lenders, requiring that transactions are performed in U.S. dollars in compliance with authorization thresholds, and requiring that transfers are made only by wire or check. A final remediation plan is expected to be in place by June 30, 2024.

Inherent Limitations of Internal Controls

While we strive to create a stronger control environment, we recognize that it is impossible for our internal controls over financial reporting to prevent all errors and all fraud. 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. 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 control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. While we are committed to continuously improve and strengthen our control environment, over time, our internal controls over financial reporting may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures were effective. may deteriorate. Projections of any evaluation of effectiveness to future periods are subject to the risk that internal controls over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the 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.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as as defined in Rules 13a-15(f) and 15d-15(f) of under the Exchange Act) Act during the quarter three months ended September 30, 2023, which March 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

From time to time, the Company is a party to or otherwise involved in legal proceedings, including suits, assessments, regulatory actions and investigations generally arising out of the normal course of business. Such proceedings can be costly, time consuming, and unpredictable. Therefore, no assurance can be given on the outcome of any proceeding or the potential impact on our results of operations or financial condition.

On December 23, 2022, a lawsuit was filed by Altor BioScience, LLC and NantCell, Inc. initiated an arbitration against Dr. Hing C. Wong, the Company's Founder and Chief Executive Officer, in California alleging breach of contract and fiduciary duty, among other claims. On that same date, , collectively, Altor/NantCell, filed a lawsuit against the Company in the U.S. District Court for the Southern District of Florida, (the "Court") or the Court, alleging misappropriation of trade secrets under state and federal laws, inducement of breach of contract and breach of fiduciary duty, among other claims tortious interference with contractual relations, specific performance, conversion, unjust enrichment, specific performance for assignment of patents and patent applications, constructive trust, and replevin. The complaint against the Company is based on very similar allegations as those alleged by Altor/NantCell in an arbitration commenced in December 2022 against the Company's Founder and Chief Executive Officer, Dr. Hing C. Wong, who was formerly employed by Altor/NantCell. Altor/NantCell alleges that Dr. Wong purportedly took Altor/NantCell's confidential and trade-secret information and used it to form and build competing products for the Company. Altor/NantCell allege that each of the provisional applications that the Company has filed for relate to the use of fusion proteins, tissue factor, and other proprietary data that were developed at Altor/NantCell, while Dr. Wong was an employee of or consultant to Altor/NantCell, and
using its resources. Altor/NantCell seeks compensatory and punitive damages, attorneys' fees and costs, and equitable relief including an order requiring the Company to assign title and all rights to the Company's patents and provisional applications to Altor/NantCell.

On January 31, 2023, the Company filed a motion to compel arbitration, a motion for the stay of the litigation, and a motion to dismiss the complaint ("motion to compel"). , which are currently pending before the Court. On April 18, 2023, the U.S. District Court for the Southern District of Florida (the "Court") heard oral argument on the Company's motion to compel and ordered the parties to provide supplemental briefing by April 28, 2023. Before the Court ruled on the Company's motion to compel, on April 26, 2023, the parties stipulated that Altor/NantCell's action against the Company would be consolidated with the Altor/NantCell arbitration demand against Dr.

Wong. On April 27, 2023, the Court approved the parties' stipulation and ordered the parties to arbitration. On May 1, 2023, Altor/NantCell filed a demand against the Company before JAMS. On May 3, 2023, Altor/NantCell dismissed the federal court action without prejudice and the Court ordered the case dismissed without prejudice and closed the case. Altor/NantCell's proceeding against the Company is now proceeding in arbitration before JAMS. JAMS, with an arbitration hearing scheduled for May 20, 2024.

In addition, on March 26, 2024, Altor/NantCell gave notice that they are filing a complaint (the "Complaint") against the Company in the Chancery Court of the State of Delaware for the contribution of legal fees and expenses advanced to Dr. Wong, our founder and chief executive officer, in connection with the arbitration discussed above. Prior to the filing of the Complaint, Altor/NantCell had previously sought advancement from the Company and the Company agreed to advance 50% of Dr. Wong's legal fees going forward from December 2023. On January 8, 2024, Altor/NantCell reserved their right to pursue contribution against the Company for 50% of the amount Altor/NantCell sent for advancement of expenses for Dr. Wong. In the Complaint, Altor/NantCell seek 50% of the fees they have already advanced to Dr. Wong, a declaration that the Company has an obligation to contribute 50% of the advancement of Dr. Wong's expenses including 50% of Dr. Wong's expenses incurred in connection with the arbitration through final resolution of the matter, and costs and fees in bringing this action.

Although adverse decisions (or settlements) may occur in the lawsuit legal proceedings described above, it is not possible to reasonably estimate the possible loss or range of loss, if any, associated therewith at this time. As time and, as such, no accrual for these matters has been recorded within our audited financial statements included elsewhere in this Annual Report. If liability is determined, it could have a material adverse effect on the Company's business, results of operations and financial statements. condition.

Item 1A. Risk Factors.

There have been no material changes to the risk factors previously disclosed by us in our Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on March 28, 2023. Report. The risk factors included in the Form 10-K Annual Report continue to apply to us and describe risks and uncertainties that could cause actual results to differ materially from the results expressed or implied by the forward-looking statements contained in this Quarterly Report on Form 10-Q. Report. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business, financial condition and results of operations.

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

Unregistered Sales of Equity Securities

None.

On February 20, 2024 (the "Purchase Date"), we entered into subscription agreements (the "Subscription Agreements") with certain officers and directors of the Company, including our Founder and Chief Executive Officer, our Chief Financial Officer and the Chairman of the Company's Board of Directors, pursuant to which the Company sold an aggregate of 1,785,718 shares (the "Shares") of our common stock, par value $0.0001 per share (the "Common Stock"), at a purchase price of $1.40 per share for an aggregate purchase price of $2.5 million. The per share purchase price represents a 25% premium to the per share closing price of the Common Stock as reported on the Nasdaq Global Market on the Purchase Date and a 19% premium to the 5-day volume weighted average closing price per share of the Common Stock as reported on the Nasdaq Global Market for the period ending on the Purchase Date.

The Shares issued pursuant to the Subscription Agreements were not registered under the Securities Act of 1933, as amended, in in reliance upon exemptions provided by Section 4(a)(2) of the Securities Act of 1933, as amended, and Rule 506 of Regulation D promulgated thereunder.

Issuer Repurchases of Equity Securities

None.

Use of Proceeds

There has been no material change in the planned use of proceeds from our IPO from that described in the final prospectus filed by us with the SEC on July 21, 2021.

Item 3. Defaults Upon Senior Securities.

Not Applicable.

Item 4. Mine Safety Disclosures.

Not Applicable.

Item 5. Other Information.

Insider Adoption or Termination of Trading Agreements Arrangements

During the three months fiscal quarter ended September 30, 2023 March 31, 2024, none of our directors or officers informed us of the adoption amendment,, modification or termination of a "Rule 10b5-1 trading arrangement" or a "non-Rule 10b5-1 trading agreement" arrangement," as those terms are defined in Regulation S-K, Item 408.

Secured Notes Issuance

The following information is being included in this Item 5 in lieu of filing such information on a Current Report on Form 8-K under Item 2.03. Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant and Item 8.01:

On March 28, 2024, we closed the previously announced issuance of $2.0 million in aggregate principal amount of Secured Notes (the "Initial Secured Notes").

On May 13, 2024, we closed an additional issuance of $1.6 million of Secured Notes (the "Additional Secured Notes") to our Founder and Chief Executive Officer. The Additional Secured Notes were issued pursuant to the previously announced Note Purchase Agreement, dated as of March 28, 2024, between us and the Purchasers (as defined in the Note Purchase Agreement) party thereto. The material terms of the Additional Secured Notes are identical to the terms of the previously disclosed Initial Secured Notes.

The issuance of the Additional Secured Notes was exempt from the registration requirements of the Securities Act of 1933, as amended, in accordance with Section 4(a)(2) and/or Regulation 506 promulgated thereunder, as a transaction by an issuer not involving a public offering. In addition, our Board of Directors and the Audit Committee of our Board of Directors reviewed the transaction under our policy for Related Party Transactions (the "Policy") and determined that the issuance of the Additional Secured Notes was in compliance with the Policy.

Please refer to the Annual Report for a description of the agreements entered into in connection with Initial Secured Notes and the Additional Secured Notes.

Item 6. Exhibits.

The exhibits filed or furnished as part of this Quarterly Report on Form 10-Q are set forth on the Exhibit Index, which Exhibit Index is incorporated herein by reference.

		Incorporated by Reference					
Exhibit Number	Description	Form	Date File No.	Number Exhibit No.	Filing Date	Filed Herewith

10.1#	Senior Secured Note Purchase Agreement, dated March 28, 2024, by and between the Company and the Purchaser party thereto					X
10.2#	Senior Secured Promissory Note, dated March 28, 2024, by and between the Company and the Holder party thereof	10-K	001-40591	10.18	04/01/2024	
10.3#	Pledge Agreement, dated March 28, 2024, by and between the Company, Escrow Agent and Noteholder party thereto	10-K	001-40591	10.19	04/01/2024	
10.4#	Escrow Agreement, dated March 28, 2024, by and between the Company, Escrow Agent and Noteholder party thereto	10-K	001-40591	10.20	04/01/2024	
10.5#	Form of Subscription Agreement, dated February 20, 2024, by and between the Company and the Subscribers party thereto					X
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as amended, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1*	Certification of Principal Executive Officer 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 Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101	The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2023 March 31, 2024, formatted in Inline XBRL (eXtensible Business Reporting Language): (i) the Condensed Balance Sheets as of December 31, 2022 December 31, 2023 and September 30, 2023 March 31, 2024 (unaudited); (ii) the Condensed Statements of Operations for the three and nine months ended September 30, 2022 March 31, 2023 (unaudited) and September 30, 2023 March 31, 2024 (unaudited); (iv) the Condensed Statements of Changes in Stockholders' Equity for the nine three months ended September 30, 2022 March 31, 2023 (unaudited) and September 30, 2023 March 31, 2024 (unaudited); (v) the Condensed Statements of Cash Flows for the nine three months ended September 30, 2022 March 31, 2023 (unaudited) and September 30, 2023 March 31, 2024 (unaudited); and (vi) the notes to the Condensed Financial Statements (unaudited).					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					X

* This certificate certification is deemed not filed for purpose of Section 18 of the Exchange Act or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities act Act or the Exchange Act.

Certain information in this document has been excluded pursuant to Item 601(a)(5) or (a)(6) of Regulation S-K. The Registrant agrees to furnish supplementally such information to the SEC upon request.

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.

HCW Biologics Inc.

Date: November 14, 2023 May 15, 2024

By: /s/ Hing C. Wong

Hing C. Wong

Chief Executive Officer

(Principal Executive Officer)

Date: November 14, 2023 May 15, 2024

By: /s/ Rebecca Byam

Rebecca Byam

Chief Financial Officer

(Principal Financial and Accounting Officer)

4131-2309-9215.4

EXHIBIT 10.1

HCW BIOLOGICS INC.

SENIOR SECURED NOTE PURCHASE AGREEMENT

This Senior Secured Note Purchase Agreement (this "Agreement") is made as of March 28, 2024 (the "Closing Date") by and between HCW Biologics Inc., a Delaware corporation (the "Company"), and each of the purchasers listed on Exhibit B attached to this Agreement (each a "Purchaser" and together the "Purchasers").

RECITALS

The Company desires to issue and sell and each Purchaser desires to purchase,

a senior secured promissory note in substantially the form attached to this Agreement as Exhibit A (the "Note"). Capitalized terms not otherwise defined herein have the meaning given them in the Note.

AGREEMENT

The parties hereby agree as follows:

1. **Purchase and Sale of Notes.**

(a) **Sale and Issuance of Notes.** Subject to the terms and conditions of this Agreement, each Purchaser agrees to purchase at the Closing (as defined below) and the Company agrees to sell and issue to each Purchaser a Note in the principal amount set forth opposite such Purchaser's name on Exhibit B. The purchase price of each Note shall be equal to 100% of the principal amount of such Note. The Company's agreements with each of the Purchasers are separate agreements, and the sales of the Notes to each of the Purchasers are separate sales.

(b) **Closing; Delivery.**

(i) Thepurchase and sale of the Notes shall take place remotely by the mailed or electronic exchange (including, for the avoidance of doubt, by DocuSign) among the parties and their counsel. All documents and deliverables required under this Agreement must be received by 10:00 a.m. Eastern Time, on March 28, 2024, or in such other manner or at such other time and place as the Company and the Purchasers mutually agree, orally or in writing (which time and place are designated as the "Closing"). In the event there is more than one closing, the term "Closing" shall apply to each such closing, unless otherwise specified herein, but in no event shall such Closing take place later than ninety (90) days after March 28, 2024.

(ii)At each Closing, the Company shall deliver to each Purchaser the Note to be purchased by such Purchaser against (1) each Purchaser's commitment to remit payment of the purchase price therefor by check payable to the Company or by wire transfer to a bank designated by the Company in accordance with the wire instructions attached as Exhibit C hereto at or before the Closing Date, (2) delivery of counterpart signature pages to this Agreement and the Note, and (3) delivery of a validly completed and executed IRS Form

W-8BEN/W-8BEN-E, IRS Form W-9 or similar form, as applicable, establishing such Purchaser's exemption from withholding tax.

(iii)Until the earlier of (A) such time as the aggregate amount of committed principal indebtedness evidenced by the Notes equals a total of

$10,000,000, or (B) the date 90 days from March 28, 2024, the Company may sell additional Notes to such persons or entities as determined by the Company, or to any Purchaser who desires to acquire additional Notes. All such sales shall be made on the terms and conditions set forth in this Agreement. For purposes of this Agreement, and all other agreements contemplated hereby, any additional purchaser so acquiring Notes shall be deemed to be a "Purchaser" for purposes of this Agreement, and any notes so acquired by such additional purchaser shall be deemed to be "Notes".

2. **Security Interest.** The indebtedness evidenced by the Notes shall be secured by the Company's equity ownership interest in Wugen, Inc. (the "Pledged Shares") in accordance with the provisions of a pledge agreement among the Company and the Purchasers in the form attached as Exhibit D to this Agreement (the "Pledge Agreement").

3. **Optional Prepayment**. The Notes may be prepaid in whole or in part at any time prior to the Maturity Date (each, a "Prepayment Event"); provided, however, that the amount of any such prepayment (the "Prepayment Amount") must be made to all the Purchasers on a *pro rata* basis based on their respective pro rata share of the principal amount of the Notes. Notwithstanding anything to the contrary set forth herein, if there is a Prepayment Event, then on the date thereof (the "Prepayment Date"), in addition to the Prepayment Amount the Company shall pay the Premium Amount (as defined below) to all the Purchasers on a *pro rata* basis based on their respective *pro rata* share of the principal amount of the Notes. For purposes of this Agreement, the "Premium Amount" shall equal to the product of (i) the aggregate principal balance of the Notes then outstanding as of the applicable Prepayment Date prior to giving effect to the Prepayment Amount, multiplied by (ii) 0.05.

4. **Mandatory Prepayment**. Upon the occurrence of a qualifying event prior to Maturity Date described in this Section 4, the Notes, including principal, accrued interest thereon, plus the Premium Amount required under Section 3 above, must be paid in the manner and to the extent provided herein. Any proceeds remaining from the sale of the Pledge Shares after meeting Mandatory Prepayment requirements shall be retained by the Company.

(i) Qualifying event related to an Initial Public Offering (as defined below) or Merger Event (as defined below):

(1) In the event that Wugen, Inc. completes its Initial Public Offering or undergoes Merger Event prior to the Maturity Date, which results in a price per share for the Pledged Shares of at least $5.00 (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification), the Company shall sell the Pledged Shares for cash and apply the proceeds of the sale of the Pledged Shares, *pro rata*, first to prepay in full the indebtedness evidenced by the Notes, including any accrued and unpaid interest thereon, plus the Premium Amount.

(2) Pledged Shares must be freely tradeable, with all marketing restrictions expired, including a 180-day lockup requirement that is typical of Initial Public Offerings and Merger Events.

(3) All Purchasers will participate in the Mandatory Prepayment event and the Notes, including principal, accrued interest thereon and Premium Amount, will be prepaid to Purchasers as provided in this Section 4.

(4) In order to effect the sale of the Pledged Shares, Purchasers agree to release the Pledged Shares from escrow so that the Company may sell the Pledged Shares. Company shall notify Purchasers of a qualifying event and agrees to effect the sale of Pledged Shares within fifteen (15) business days from the time the Pledged Shares are removed from escrow. The Company will instruct the institutional broker to wire proceeds directly to each Purchaser in the amount of Note, including principal, accrued interest thereon and Premium Amount. Any proceeds remaining will be wired directly to the Company.

(ii) Qualifying event related to the acquisition of Wugen Inc. by another entity for cash or publicly-traded securities:

(1) In the event that Wugen Inc. is acquired by an entity for cash or publicly-traded securities prior to the Maturity Date, the Company will pay Purchaser full indebtedness evidenced by the Notes, including any accrued and unpaid interest thereon, plus Premium Amount.

(2) In the event that Wugen Inc. is acquired by an entity for publicly-traded securities prior to the Maturity Date, the Company will follow the same procedures described in Subsection (i) above.

For purposes of this Section 4, the following terms used in this Agreement have the respective meanings set forth below:
"Initial Public Offering" means an underwritten initial public offering of Wugen common stock pursuant to an effective registration statement filed under the Securities Act (as defined below), covering the offer and sale of its common stock that results in the listing of the Wugen common stock on the New York Stock Exchange, New York Stock Exchange American or the Nasdaq Stock Market.
"Merger Event" means (i) any merger or other similar transaction to which Wugen is a party as a result of which Wugen's common stock, in whole or in part, is converted into or exchanged for cash or securities of any successor entity or (ii) the sale, lease, exchange, exclusive, irrevocable license or other transfer of all or substantially all of Wugen's properties or assets (as determined on a consolidated basis) to any successor entity (other than to the Company).

5. **Representations and Warranties of the Company.** The Company hereby represents and warrants to each Purchaser that:

(a) **Organization, Good Standing and Qualification.** The Company is a corporation duly organized, validly existing and in good standing under the laws of the state of Delaware and has all requisite corporate power and authority to carry on its business as now conducted and as proposed to be conducted. The Company is duly qualified to transact business and is in good standing in each jurisdiction in which the failure to so qualify would have a material adverse effect on its business or properties.

(b) **Authorization.** This Agreement and the Notes have been duly authorized by the Board of Directors of the Company.This Agreement and the Notes, when executed and delivered by the Company, shall constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their respective terms except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

(c) **Waiver from Wugen.** The Company represents that it has obtained a waiver from Wugen and certain of its stockholders to various transfer restrictions set forth in the Amended and Restated Right of First Refusal and Co-Sale Agreement, dated July 9, 2021, by and between Wugen and those stockholders.

(c) **Disqualification.** The Company is not disqualified from relying on Rule 506 of Regulation D ("Rule 506") under the Securities Act of 1933, as amended (the "Securities Act") for any of the reasons stated in Rule 506(d) in connection with the issuance and sale of the Notes to the Purchasers. The Company has furnished to each Purchaser, a reasonable time prior to the Closing Date, a description in writing of any matters that would have triggered disqualification under Rule 506(d) but which occurred before September 23, 2013, in each case, in compliance with the disclosure requirements of Rule 506(e).

6. **Representations and Warranties of the Purchasers.** Each Purchaser hereby represents and warrants to the Company that:

(a) **Authorization.** Such Purchaser has full power and authority to enter into this Agreement. This Agreement, when executed and delivered by the Purchaser, will constitute a valid and legally binding obligation of the Purchaser, enforceable in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of a specific performance, injunctive relief, or other equitable remedies.

(b) **Purchase Entirely for Own Account.** This Agreement is made with the Purchaser in reliance upon the Purchaser's representation to the Company, which by the Purchaser's execution of this Agreement, the Purchaser hereby confirms, that the Note to be acquired by the Purchaser will be acquired for investment for the

Purchaser's own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and that the Purchaser has no present intention of selling, granting any participation in, or otherwise distributing the same. By executing this Agreement, the Purchaser further represents that the

Purchaser does not presently have any contract, undertaking, agreement or arrangement with any person to sell, transfer or grant participations to such person or to any third person, with respect to the Note. The Purchaser either has not been formed for the specific purpose of acquiring the Note, or each beneficial owner of equity securities of or equity interests in the Purchaser is an accredited investor as defined in Rule 501(a) of Regulation D promulgated under the Securities Act.

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

(d) **Restricted Securities.** The Purchaser understands that the Note has not been, and will not be, registered under the Securities Act, by reason of a specific exemption from the registration provisions of the Securities Act which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser's representations as expressed herein. The Purchaser understands that the Note is a "restricted security" under applicable U.S. federal and state securities laws and that, pursuant to these laws, the Purchaser must hold the Noteindefinitely unless they are registered with the Securities and Exchange Commission and qualified by state authorities, or an exemption from such registration and qualification requirements is available. The Purchaser acknowledges that the Company has no obligation to register or qualify the Note for resale. The Purchaser further acknowledges that if an exemption from registration or qualification is available, it may be conditioned on various requirements including, but not limited to, the time and manner of sale, the holding period for the Note, and on requirements relating to the Company which are outside of the Purchaser's control, and which the Company is under no obligation and may not be able to satisfy.

(e) **No Public Market.** The Purchaser understands that no public market now exists for the Note, and that the Company has made no assurances that a public market will ever exist for the Note.

(f) **Legends.** The Purchaser understands that the Note may bear one or all of the following legends:

(i) "THE NOTE REFERENCED HEREIN HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933, AS AMENDED."

(ii) Any legend required by the securities laws of any state to the extent such laws are applicable to the Note.

(g) **Restrictions on Security**. The Purchaser acknowledges that the market for the Pledged Shares may be illiquid and, accordingly, the Purchaser may not be able to

liquidate the Pledged Shares following receipt thereof upon an Event of Default (as defined in the Note) and that the Pledged Shares are subject to the various transfer restrictions set forth in Section 3 of that certain Common Stock Issuance Agreement, dated December 24, 2020 as amended on July 9, 2021, by and between the Company and Wugen, Inc. and any amendments or supplements thereto, including any market standoff provisions, as well as certain rights of first refusal, co-sale rights and other rights that expire following the Initial Public Offering or Merger Event.

(h) **Accredited Investor.** The Purchaser is an accredited investor as defined in Rule 501(a) (1), (2), (3) or (7) of Regulation D promulgated under the Securities Act.

(i) **Disqualification.** The Purchaser represents that neither the Purchaser, nor any person or entity with whom the Purchaser shares beneficial ownership of Company securities, is subject to any of the "Bad Actor" disqualifications described in Rule 506(d)(1)(i) to (viii) under the Securities Act. Each Purchaser also agrees to notify the Company if such Purchaser or any person or entity with whom such Purchaser shares beneficial ownership of Company securities becomes subject to such disqualifications after the Closing Date (so long as such Purchaser or any such person beneficially owns any equity securities of the Company).

(j) **Foreign Investors.** If a Purchaser is not a United States person (as defined by Rule 902(k) under the Securities Act), such Purchaser hereby represents that it has satisfied itself as to the full observance of the laws of its jurisdiction in connection with any invitation to subscribe for the Note or any use of this Agreement, including (i) the legal requirements within its jurisdiction for the purchase of the Note, (ii)

any foreign exchange restrictions applicable to such purchase, (iii) any governmental or other consents that may need to be obtained and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale or transfer of the Note. Such Purchaser's subscription and payment for, and his or her continued beneficial ownership of the Note, will not violate any applicable securities or other laws of the Purchaser's jurisdiction.

(k) **Foreign Investment Regulations.** Each Purchaser represents that any consideration to be paid for the Note pursuant to this Agreement does not derive from activity that is or was contrary to law or from a person or location that is or was the subject of a United States embargo or other economic sanction and that no consideration to be paid for the Note in accordance with this Agreement will provide the basis for liability for any person under United States anti-money laundering laws or economic sanctions laws. Each Purchaser represents that neither such Purchaser nor any of its nominees or affiliates is on the specially designated OFAC list or similar European Union watch list.

7. **Collateral Agent**. The Company hereby appoints Mercedes M. Sellek, P.A., as Collateral Agent to act for the Purchasers as collateral agent (the "Collateral Agent"), to hold the Pledged Shares for the benefit of the Purchasers.

8. **Conditions of the Purchasers' Obligations at Closing.** The obligations of each Purchaser to the Company under this Agreement are subject to the fulfillment, on or before the Closing, of each of the following conditions, unless otherwise waived:

(a) **Representations and Warranties.** The representations and warranties of the Company contained in Section 5 hereof shall be true on and as of the Closing with the same effect as though such representations and warranties had been made on and as of the date of the Closing.

(b) **Qualifications.** All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Note pursuant to this Agreement shall be obtained and effective as of the Closing.

(c) **Collateral Agent**. The Company shall have appointed Mercedes M. Sellek, P.A., as Collateral Agent in accordance with Section 7 of this Agreement and the Escrow Agreement.

(d) **Pledge Agreement.** The Company and the Collateral Agent shall have executed the Pledge Agreement.

9. **Conditions of the Company's Obligations at Closing.** The obligations of the

Company to each Purchaser under this Agreement are subject to the fulfillment, on or before the Closing, of each of the following conditions, unless otherwise waived:

(a) **Representations and Warranties.** The representations and warranties of each Purchaser contained in Section 6 hereof shall be true on and as of the Closing with the same effect as though such representations and warranties had been made on and as of the Closing.

(b) **Qualifications.** All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Note pursuant to this Agreement shall be obtained and effective as of the Closing.

(c) **Delivery of Form W-8 BEN or Form W-9.** Each Purchaser shall have completed and delivered to the Company a validly executed IRS Form W-8 BEN or IRS Form W-9, as applicable, establishing such Purchaser's exemption from withholding tax as required by the tax authority of the Company's or Purchase's respective jurisdiction.

10. **Finder's Fee.** Each Purchaser represents that it neither is nor will be obligated for any finder's fee or commission in connection with this transaction. The Company agrees to indemnify and hold harmless each Purchaser from any liability for any commission or compensation in the nature of a finder's fee (and the costs and expenses of defending against such liability or asserted liability) for which the Company or any of its officers, employees or representatives is responsible.

11. **Exculpation Among Purchasers.** Each Purchaser acknowledges that it is not relying upon any person, firm or corporation, other than the Company and its officers and directors, in making its investment or decision to invest in the Company. Each Purchaser agrees that none of the other Purchasers nor the respective controlling persons, officers, directors, partners, agents, or employees of such other Purchaser shall be liable for any action heretofore or hereafter taken or omitted to be taken by any of them in connection with the Note.

12. **Expenses.** Each of the Purchasers and the Company agree to pay its own respective costs and expenses in connection with the preparation, execution, and delivery of this Agreement and the Note.

13. **Miscellaneous.**

(a) **Governing Law.** The validity, interpretation, construction and performance of this Agreement, and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted

in accordance with the laws of the state of New York, without giving effect to principles of conflicts of law.

(b) **Entire Agreement.** This Agreement, and the documents referred to herein constitute the entire agreement between the parties hereto pertaining to the subject matter hereof, and any and all other written or oral agreements existing between the parties hereto are expressly canceled.

(c) **Amendments and Waivers.** Any term of this Agreement may be amended or waived only with the written consent of the Company and the holders of at least a majority of the aggregate unpaid principal amount of the Notes. Any amendment or waiver effected in accordance with this Section 13(c) shall be binding upon each Purchaser and each transferee of the Notes, each future holder of all such Notes, and the Company.

(d) **Successors and Assigns.** Except as otherwise provided in this Agreement, this Agreement, and the rights and obligations of the parties hereunder, will be binding upon and inure to the benefit of their respective successors, assigns, heirs, executors, administrators and legal representatives. The Company may assign any of its rights and obligations under this Agreement. No other party to this Agreement may assign, whether voluntarily or by operation of law, any of its rights and obligations under this Agreement, except with the prior written consent of the Company.

(e) **Notices.** Any notice, demand or request required or permitted to be given under this Agreement shall be in writing and shall be deemed sufficient when delivered personally or by overnight courier or sent by email, or 48 hours after being deposited in the U.S. mail as certified or registered mail with postage prepaid, addressed to the party to be notified at such party's address as set forth on the signature page, as subsequently modified by written notice, or if no address is specified on the signature page, at the most recent address set forth in the Company's books and records.

(f) **Severability.** If one or more provisions of this Agreement are held to beunenforceable under applicable law, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement, (ii) the balance of the Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of the Agreement shall be enforceable in accordance with its terms.

(g) **Construction.** This Agreement is the result of negotiations between and has been reviewed by each of the parties hereto and their respective counsel, if any; accordingly,

this Agreement shall be deemed to be the product of all of the parties hereto, and no ambiguity shall be construed in favor of or against any one of the parties hereto.

(h) **Counterparts.** This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and all of which together shall constitute one and the same agreement. Execution of a facsimile or scanned copy will have the same force and effect as execution of an original, and a facsimile or scanned signature will be deemed an original and valid signature.

[Signature Pages Follow]

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE COMPANY:

HCW BIOLOGICS INC.

By:/s/ Hing C. Wong
Title: CEO
Address:

2929 N Commerce Pkwy
Miramar, FL 33025

Email: HingWong@hcwbiologics.com

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

BENJAMIN J. PATZ

(PRINT NAME)

By: /s/ Benjamin J. Patz
(Signature)

Name: Benjamin J. Patz
Title:

Address:
[***]
[***]
Email: [***]

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

CHRIS CHEUNG & LING CHEUNG
(PRINT NAME)

By:/s/ Chris Cheung
(Signature)

By:/s/ Ling Cheung
(Signature)

Name: Chris Cheung and Ling Cheung
Title:

Address:
[***]
[***]
Email: [***]

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

GARY M. WINER
(PRINT NAME)

By: /s/ Gary M. Winer
(Signature)

Name:
Title:

Address:
[***]
Email: [***]

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

HO CHEUNG WONG
(PRINT NAME)

By:/s/ Ho Cheung Wong
(Signature)

Name: Ho Cheung Wong
Title:

Address:
[***].
[***]
Email: [***]

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

HOI SANG YEUNG
(PRINT NAME)

By: /s/ Hoi Sang Yeung
(Signature)

Name:
Title:

Address:
[***]
[***]
Email: [***]

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

R. KEMP RIECHMANN TRUSTEE REVOCABLE TRUST OF ROLAND KEMP RIECHMANN
(PRINT NAME)

By: /s/ Kemp Riechmann
(Signature)

Name: R. Kemp Riechmann
Title: Trustee

Address:
[***]
[***]
Email: [***]

4131-2309-9215.4

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

LMV HOLDING
(PRINT NAME)

By: /s/ Cornelis Van De Velde
(Signature)

Name:CORNELIS VAN DE VELDE
Title:CEO

Address:
[***]
[***]
Email:

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

MICHAEL POON & MANWAH WONG
(PRINT NAME)

By: /s/ Michael Poon
(Signature)

By: /s/ Manwah Wong
(Signature)

Name: MICHAEL POON & MANWAH WONG
Title:

Address:
[***]
[***]
Email: [***]

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

REBECCA BYAM
(PRINT NAME)

By:/s/ Rebecca Byam
(Signature)

Name: Rebecca Byam
Title:

Address:
[***]
[***]
Email: [***]

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE COMPANY:

HCW BIOLOGICS INC.

By:/s/ Rebecca Byam
Title: CFO
Address:

2929 N Commerce Pkwy
Miramar, FL 33025

Email: rebeccabyam@hcwbiologics.com

The parties have executed this Senior Secured Note Purchase Agreement as of the date first written above.

THE PURCHASERS:

HING C. WONG
(PRINT NAME)

By:/s/ Hing C. Wong
(Signature)

Name: Hing C. Wong
Title:

Address:
[***]
[***]
Email: [***]

EXHIBIT A

4131-2309-9215.4

EXHIBIT B

SCHEDULE OF PURCHASERS

Name	Note Principal Amount	Purchase Date
Dr. Hing C Wong	$620,000	03/28/24
Chris Cheung & Ling Cheung	200,000	03/28/24
Michael Poon & Manwah Wong	100,000	03/28/24
Ho Cheung Wong	60,000	03/28/24
Hoi Sang Yeung (Kelly)	250,000	03/28/24
R. Kemp Riechmann Trustee Revocable Trust of Roland Kemp Riechmann	250,000	03/28/24
Benjamin J. Patz	250,000	03/28/24
Rebecca Byam	220,000	03/28/24
Gary M. Winer	50,000	03/28/24
LMV Holding	8,000,000	03/28/24
Total Secured Loan	**$10,000,000**	

4131-2309-9215.4

EXHIBIT C
WIRE INSTRUCTIONS
[***]

EXHIBIT D

PLEDGE AGREEMENT

[***]

Exhibit 10.5

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND IS THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE AND CONFIDENTIAL.

FORM OF COMMON STOCK SUBSCRIPTION AGREEMENT

THIS COMMON STOCK SUBSCRIPTION AGREEMENT (this "Agreement") is made as of the date set forth on the signature page hereof between HCW BIOLOGICS INC., a Delaware corporation (the "Company"), and the [Name of Investor of Investment Entity], (the "Subscriber").

WITNESSETH:

WHEREAS, the Company desires to issue to the Subscriber the number of shares (the "Shares") of its Common Stock, par value $.0001 per share (the "Common Stock") set forth at the end of this Agreement, and;

WHEREAS, the Subscriber desires to acquire the Shares (being sometimes referred to collectively herein as the "Securities") on the terms and conditions hereinafter set forth;

NOW, THEREFORE, in consideration of the premises and the mutual representations and covenants hereinafter set forth, the Company and the Subscriber do hereby agree as follows:

A. SUBSCRIPTION FOR SHARES AND REPRESENTATIONS BY SUBSCRIBER

a. Subject to the terms and conditions of this Agreement, the Company will issue and sell to the Subscriber and the Subscriber subscribes for and will purchase from the Company the Shares for the aggregate purchase price (“Purchase Price”) set forth at the end of this Agreement, which shall be equal to the product of the number of Shares subscribed for by the Subscriber times the per share purchase price equal to the greater of: (x) the closing sales price for the Company’s common stock as quoted on the Nasdaq Stock Market on the date of Closing (as defined below) and (y) $1.40, and the Subscriber hereby subscribes for and agrees to purchase from the Company the Shares, for said price per share. The rights and preferences of the Common Stock are set forth in the Restated Certificate of Incorporation of the Company.

b. The closing of the purchase and sale of the Shares under this Agreement (the “Closing”) shall occur on a date designated by the Company, which date shall be on or before February 20, 2024 (the “Purchase Date”). The Closing shall take place at the principal office of the Company, or at such other time and place as the Company and the Subscriber mutually agree. At the Closing, unless the Subscriber and the Company otherwise agree (i) the Subscriber shall pay the Purchase Price to the Company: (a) by wire transfer of immediately available funds to the Company’s operating account designated on Exhibit A hereto or (b) by check made payable to the Company, so long as the check is provided with sufficient time that funds are cleared by the Closing Date; and (ii) the Company shall cause its transfer agent to create a book entry representing the Shares to be purchased by Subscriber (which shall be issued in Subscriber’s name).

c. This Agreement may be terminated at any time prior to the Closing:

(1) by mutual written consent of the Company and the Subscriber;

(2) by the Subscriber, upon a breach of any material representation and warranty, covenant or agreement on the part of the Company set forth in this Agreement, or if any material representation and warranty of the Subscriber shall have become untrue in any material respect in either case such that the conditions in Section C.a. would be incapable of being satisfied by the date of the Closing; or

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(3) by the Company upon a breach of any material representation and warranty, covenant or agreement on the part of the Subscriber set forth in this Agreement, or if any material representation and warranty of the Subscriber shall have become untrue in any material respect, in either case such that the conditions in Section C.b. below would be incapable of being satisfied by the date of the Closing.

In the event of termination of this Agreement pursuant to this paragraph, this Agreement shall forthwith become void, there shall be no liability on the part of the Company or the Subscriber to each other and all rights and obligations of any party hereto shall cease; provided, however, that nothing herein shall relieve any party from liability for the willful breach of any of its representations and warranties, covenants or agreements set forth in this Agreement.

d. The Subscriber recognizes that the purchase of the Shares involves a high degree of risk in that (i) the Company is an early-stage biotechnology company with no revenues from the commercial sale of its products and requires substantial funds in addition to the proceeds of this transaction, particularly in light of the risks and the Company's ongoing expenditures in connection with defending against the allegations of misappropriation of trade secrets, inducement of breach of contract and breach of fiduciary duty, among other claims

against the Company, raised by Altor BioScience, LLC and NantCell, Inc. in the current arbitration proceedings involving the Company; (ii) an investment in the Company is highly speculative, and only investors who can afford the loss of their entire investment should consider investing in the Company; (iii) the Subscriber may not be able to liquidate his investment; (iv) transferability of the Securities is limited, and (v) in the event of a disposition, the Subscriber could sustain the loss of his entire investment.

e. The Subscriber represents that he is acquiring the Shares hereunder for investment, and that he is able to bear the economic risk of an investment in the Shares.

f. The Subscriber acknowledges that he recognizes the highly speculative nature of this investment; and he is able to bear the economic risk he hereby assumes.

g. The Subscriber hereby represents that he is aware of the Company's business affairs and financial condition and has been furnished by the Company during the course of this transaction with sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Securities; and that he has been afforded the opportunity to ask questions of and receive answers from duly authorized officers or other representatives of the Company concerning the terms and conditions of this offering, and any additional information which he had requested.

h. The Subscriber hereby acknowledges that this offering of the Shares has not been reviewed by the United States Securities and Exchange Commission (the "Commission") or any state regulatory authority, since this offering is intended to be exempt from the registration requirements of Section 5 of the Act pursuant to Section 4(a)(2) of the Act and Rule 506 of Regulation D of the Commission. The Subscriber represents that the Shares are being purchased for his own account, for investment and not for distribution or resale to others.

i. The Subscriber understands that the Securities have not been registered under the Act or any state securities or "blue sky" laws and are being sold in reliance on exemptions from the registration requirements of such Act and such laws and agrees that the Securities will not be resold or transferred except as permitted under such Act and such laws pursuant to registration or exemption therefrom. The Subscriber further acknowledges that the Company has no obligation to register or qualify the Securities for resale.

j. The Subscriber consents to the placement of a legend on any book entry, certificate or other document evidencing the Shares as follows:

THE SHARES OF COMMON STOCK REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE SOLD OR TRANSFERRED UNLESS THE REGISTRATION PROVISIONS OF THE SAID ACT HAVE BEEN COMPLIED WITH OR UNLESS IN THE OPINION OF COUNSEL SATISFACTORY TO THE COMPANY, BOTH AS TO THE IDENTITY OF THE COUNSEL AND AS TO THE FORM AND SUBSTANCE OF THE OPINION, COMPLIANCE WITH SUCH PROVISIONS IS NOT REQUIRED.

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k. The Subscriber agrees that, in order to ensure compliance with the restrictions referred to herein, the Company may issue appropriate "stop transfer" instructions to its transfer agent and that, if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

l. Neither the Company nor its transfer agent shall be required (i) to transfer on its books any of the Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares shall have been so transferred.

B. REPRESENTATIONS BY, AND COVENANTS OF, THE COMPANY

a. The Company represents and warrants to the Subscriber that on the date hereof:

(1) The Company is a corporation duly organized, existing and in good standing under the laws of the State of Delaware and has the corporate power to issue and sell the Shares to the Subscriber;

(2) The Shares have been duly and validly authorized and, when issued and paid for in accordance with the terms hereof, will be duly and validly issued, fully paid and nonassessable;

b. The copies of the Restated Certificate of Incorporation and Restated By-Laws of the Company as currently in effect which have heretofore been delivered to the Subscriber are true, complete and correct.

C. CLOSING CONDITIONS

a. The obligations of the Subscriber to proceed with respect to its purchase of the Shares at the Closing is subject to the following conditions any and all of which may be waived, in whole or in part, to the extent permitted by applicable law:

(1) Each of the representations and warranties of the Company contained in this Agreement shall be true and correct in all material respects as of the Closing as though made on and as of the Closing, except (i) for changes specifically permitted by this Agreement, and (ii) that those representations and warranties which address matters only as of a particular date shall remain true and correct as of such date. Unless the Subscriber receives written notice to the contrary at the Closing, Subscriber shall be entitled to assume that the preceding is accurate in all respects at the Closing.

(2) The Company shall have performed or complied in all material respects with all agreements and covenants required by this Agreement to

be performed or complied with by it on or prior to the Closing. Unless the Subscriber receives written notice to the contrary at the Closing, Subscriber shall be entitled to assume that the preceding is accurate in all respects at the Closing.

(3) No governmental authority or other agency or commission or federal or state court of competent jurisdiction shall have enacted, issued, promulgated, enforced or entered any statute, rule, regulations executive order, decree, injunction, or other order (whether temporary, preliminary or permanent) which is in effect and which materially restricts, prevents or prohibits consummation of the Closing or any transaction contemplated by this Agreement.

b. The obligations of the Company to proceed with the Closing is subject to the following conditions any and all of which may be waived, in whole or in part, to the extent permitted by applicable law:

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(1) Each of the representations and warranties of the Subscriber contained in this Agreement shall be true and correct as of the Closing as though made on and as of the Closing, except (i) for changes specifically permitted by this Agreement, and (ii) that those representations and warranties which address matters only as of a particular date shall remain true and correct as of such date. Unless the Company receives written notification to the contrary at the Closing, the Company shall be entitled to assume that the preceding is accurate in all respects at the Closing.

(2) The Subscriber shall have performed or complied in all material respects with all agreements and covenants required by this Agreement t be performed or complied with by it on or prior to the Closing. Unless the Company receives written notification to the contrary at the Closing, the Company shall be entitled to assume that the preceding is accurate in all respects at the Closing.

(3) No governmental authority or other agency or commission or federal or state court of competent jurisdiction shall have enacted, issued, promulgated, enforced or entered any statute, rule, regulation, executive order, decree, injunction, or other order (whether temporary, preliminary or permanent) which is in effect and which materially restricts, prevents or prohibits consummation of the Closing or any transaction contemplated by this Agreement.

D. MISCELLANEOUS

a. Any notice or other communication given hereunder shall be deemed sufficient if in writing and sent by registered or certified mail, return receipt requested, or delivered by hand against written receipt therefore, addressed to the Company, 2929 North Commerce Parkway, Miramar, Florida 33025, Attention: Nicole Valdivieso, Esq. and to the Subscriber at its address indicated on the signature page of this Agreement. Notices shall be deemed to have been given on the date of mailing, except notices of change of address, which shall be deemed to have been given when received.

b. This Agreement shall not be changed, modified or amended except by a writing signed by the parties to be charged. and this Agreement may not be discharged except by performance in accordance with its terms or by a writing signed by the party to be charged.

c. This Agreement shall be binding upon and inure to the benefit of the parties hereto and to their respective heirs, legal representatives, successors and assigns. This Agreement sets forth the entire agreement and understanding between the parties as to the subject matter thereof and merges and supersedes all prior discussions, agreements and understandings of any and every nature among them.

d. Upon the execution and delivery of this Agreement by the Subscriber, this Agreement shall become a binding obligation of the Subscriber with respect to the purchase of Shares as herein provided.

NOTWITHSTANDING THE PLACE WHERE THIS AGREEMENT MAY BE EXECUTED BY ANY OF THE PARTIES HERETO, THE PARTIES EXPRESSLY AGREE THAT ALL THE TERMS AND PROVISIONS HEREOF SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF DELAWARE, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW.

e. The holding of any provision of this Agreement to be invalid or unenforceable by a court of competent jurisdiction shall not affect any othe provision of this Agreement, which shall remain in full force and effect.

f. It is agreed that a waiver by either party of a breach of any provision of this Agreement shall not operate, or be construed, as a waiver of any subsequent breach by that same party.

g. The parties agree to execute and deliver all such further documents, agreements and instruments and take such other and further action as may be necessary or appropriate to carry out the purposes and intent of this Agreement.

This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

* If Shares are being subscribed for by an entity, the attached Certificate of Signatory must also be completed.

Number of Shares Subscribed For: 71,429 Shares

Price per Share: @ $1.40 per share

Purchase Price: $100,000.60

Name(s) Exactly as to Appear on Book Entry

	/s/ Lee Flowers /s/ Wendy Flowers
Signature	Signature (both if purchasing jointly)
	Lee Flowers, Wendy Flowers
Name Typed or Printed	Name Typed or Printed
	[***]
Residence Address	Residence Address
	[***]
City, State and Zip Code	City, State and Zip Code
	[***]
Telephone	Telephone
	[***]
Tax Identification or Social Security Number	Tax Identification or Social Security Number

This Common Stock Subscription Agreement, including a subscription contained herein is agreed to and accepted as of 02/20/2024.

HCW BIOLOGICS INC., a Delaware corporation

Signature: /s/ Peter Rhode

By: Peter Rhode

Its: CSO

This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

* If Shares are being subscribed for by an entity, the attached Certificate of Signatory must also be completed.

Number of Shares Subscribed For: 739,288 Shares

Price per Share: @ $1.40 per share

Purchase Price: $1,035,003.20

Name(s) Exactly as to Appear on Book Entry

	/s/ Hing C. Wong
Signature	Signature (both if purchasing jointly)
	Hing C. Wong
Name Typed or Printed	Name Typed or Printed
	[***]
Residence Address	Residence Address
	[***]
City, State and Zip Code	City, State and Zip Code
	[***]
Telephone	Telephone
	[***]
Tax Identification or Social Security Number	Tax Identification or Social Security Number

This Common Stock Subscription Agreement, including a subscription contained herein is agreed to and accepted as of 02/20/2024.

HCW BIOLOGICS INC., a Delaware corporation

Signature: /s/ Peter Rhode

By: Peter Rhode

Its: CSO

This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

* If Shares are being subscribed for by an entity, the attached Certificate of Signatory must also be completed.

Number of Shares Subscribed For: 35,715 Shares

Price per Share: @ $1.40 per share

Purchase Price: $50,001.00

Name(s) Exactly as to Appear on Book Entry

	/s/ Lisa M. Giles
Signature	Signature (both if purchasing jointly)
	Lisa M. Giles (Trustee)
Name Typed or Printed	Name Typed or Printed
	[***]
Residence Address	Residence Address
	[***]

City, State and Zip Code

Telephone

Tax Identification or Social Security Number

City, State and Zip Code

[***]

Telephone

[***]

Tax Identification or Social Security Number

This Common Stock Subscription Agreement, including a subscription contained herein is agreed to and accepted as of 02/20/2024.

HCW BIOLOGICS INC., a Delaware corporation

Signature: /s/ Peter Rhode

By: Peter Rhode

Its: CSO

This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

* If Shares are being subscribed for by an entity, the attached Certificate of Signatory must also be completed.

Number of Shares Subscribed For: 760,714 Shares

Price per Share: @ $1.40 per share

Purchase Price: $ 1,065,000.00

Name(s) Exactly as to Appear on Book Entry

/s/ Rebecca Byam

Signature

Signature (both if purchasing jointly)

Rebecca Byam

Name Typed or Printed

Name Typed or Printed

[***]

Residence Address

Residence Address

[***]

City, State and Zip Code

City, State and Zip Code

[***]

Telephone

Telephone

[***]

Tax Identification or Social Security Number

Tax Identification or Social Security Number

This Common Stock Subscription Agreement, including a subscription contained herein is agreed to and accepted as of 02/20/2024.

HCW BIOLOGICS INC., a Delaware corporation

Signature: /s/ Hing C. Wong

By: Hing C. Wong, PhD

Its: Founder and CEO

This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

* If Shares are being subscribed for by an entity, the attached Certificate of Signatory must also be completed.

Number of Shares Subscribed For: 35,714 Shares

Price per Share: @ $1.40 per share

Purchase Price: $50,000.00

Name(s) Exactly as to Appear on Book Entry

	/s/ Rick S. Greene
Signature	Signature (both if purchasing jointly)
	Rick S. Greene
Name Typed or Printed	Name Typed or Printed
	[***]
Residence Address	Residence Address
	[***]
City, State and Zip Code	City, State and Zip Code
	[***]
Telephone	Telephone
	[***]
Tax Identification or Social Security Number	Tax Identification or Social Security Number

This Common Stock Subscription Agreement, including a subscription contained herein is agreed to and accepted as of 02/20/2024.

HCW BIOLOGICS INC., a Delaware corporation

Signature: /s/ Peter Rhode

By: Peter Rhode

Its: CSO

This Agreement may be executed in one or more counterparts each of which shall be deemed an original, but all of which shall together constitute one and the same instrument.

* If Shares are being subscribed for by an entity, the attached Certificate of Signatory must also be completed.

Number of Shares Subscribed For: 142,858 Shares

Price per Share: @ $1.40 per share

Purchase Price: $ 200,001.20

Name(s) Exactly as to Appear on Book Entry

	/s/ Scott Garrett
Signature	Signature (both if purchasing jointly)
	Garrett Capital Partners, LLC
Name Typed or Printed	Name Typed or Printed
	[***]
Residence Address	Residence Address
	[***]
City, State and Zip Code	City, State and Zip Code
	[***]
Telephone	Telephone
	[***]
Tax Identification or Social Security Number	Tax Identification or Social Security Number

This Common Stock Subscription Agreement, including a subscription contained herein is agreed to and accepted as of 02/20/2024.

HCW BIOLOGICS INC., a Delaware corporation

Signature: /s/ Peter Rhode

By: Peter Rhode

Its: CSO

CERTIFICATE OF SIGNATORY

(To be completed if Shares are being subscribed for by an investing entity)

I certify that I am empowered and duly authorized by the [Investing Entity] to execute and carry out the terms of the Common Stock Subscription Agreement and to purchase and hold the Shares. and certify further that the Common Stock Subscription Agreement has been duly and validly executed on behalf of the Entity and constitutes a legal and binding obligation of the Entity.

IN WITNESS WHEREOF, I have set my hand this day of _____.

[Name of Entity],

a [State] [LLC or corporation or partnership]

By: _____

Name: _____

Title: _____

Date: _____

Exhibit A

Wire Instructions

[***]

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Hing C. Wong, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of HCW Biologics Inc. for the quarter ended September 30, 2023 March 31, 2024;

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 w 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 mater respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) 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 by in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed und 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) b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be design 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) 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) 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 material affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) 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) 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) 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.

/s/ Hing C. Wong

Hing C. Wong

Founder and Chief Executive Officer

(Principal Executive Officer)

Date: November 14, 2023 May 15, 2024

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Rebecca Byam, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of HCW Biologics Inc. for the quarter ended September 30, 2023 March 31, 2024;
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 w 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 mater respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) 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 by in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed und our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is mad known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be design under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation o financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) 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) 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 material affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) 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) 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) 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.

/s/ Rebecca Byam

Rebecca Byam

Chief Financial Officer

(Principal Financial Officer)

Date: November 14, 2023 May 15, 2024

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 HCW Biologics Inc. (the "Company") on Form 10-Q for the period ended September 30, 2023 March 31, 2024 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(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 result of operations of the Company.

Date: November 14, 2023 May 15, 2024

By: /s/ Hing C. Wong

Hing C. Wong

Founder and Chief Executive Officer

(Principle 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 HCW Biologics Inc. (the "Company") on Form 10-Q for the period ended September 30, 2023 March 31, 2024 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(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 result of operations of the Company.

Date: November 14, 2023 May 15, 2024

By: /s/ Rebecca Byam

Rebecca Byam

Chief Financial Officer
(Principal Financial Officer)