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 June 30, 2023

☐ **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: 001-37627

WAVE LIFE SCIENCES LTD.

(Exact name of registrant as specified in its charter)

Singapore	**98-1356880**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
7 Straits View #12-00, Marina One East Tower Singapore	**018936**
(Address of principal executive offices)	**(Zip Code)**

+65 6236 3388
(Registrant's telephone number, including area code)

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

Title of each class	Trading symbol	Name of each exchange on which registered
$0 Par Value Ordinary Shares	WVE	The Nasdaq Global Market

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

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

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the 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 ☒

The number of outstanding ordinary shares of the registrant as of July 27, 2023 was 98,983,261.

WAVE LIFE SCIENCES LTD.

QUARTERLY REPORT ON FORM 10-Q

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As used in this Quarterly Report on Form 10-Q, unless otherwise stated or the context otherwise indicates, references to "Wave," the "Company," "we," "our," "us" or similar terms refer to Wave Life Sciences Ltd. and our wholly-owned subsidiaries.

Special Note Regarding 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 (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that relate to future events or to our future operations or financial performance. Any forward-looking statement involves known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statement. In some cases, forward-looking statements are identified by the words "anticipate," "believe," "continue," "could," "estimate," "expect," "future," "goals," "intend," "likely," "may," "might," "ongoing," "objective," "plan," "potential," "predict," "project," "seek," "should," "strategy," "target," "will" and "would" or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these identifying words. Forward-looking statements include statements, other than statements of historical fact, about, among other things: our ability to fund our future operations; our financial position, revenues, costs, expenses, uses of cash and capital requirements; our need for additional financing or the period for which our existing cash resources will be sufficient to meet our operating requirements; the success, progress, number, scope, cost, duration, timing or results of our research and development activities, preclinical studies and clinical trials, including the timing for initiation or completion of or availability of results from any preclinical studies and clinical trials or for submission, review or approval of any regulatory filing; the timing of, and our ability to, obtain and maintain regulatory approvals for any of our product candidates; the potential benefits that may be derived from any of our product candidates; our strategies, prospects, plans, goals, expectations, forecasts or objectives; the success of our collaborations with third parties; any payment that our collaboration partners may make to us; our ability to identify and develop new product candidates; our intellectual property position; our commercialization, marketing and manufacturing capabilities and strategy; our estimates regarding future expenses and needs for additional financing; our ability to develop sales and marketing capabilities; our ability to identify, recruit and retain key personnel; our financial performance; developments and projections relating to our competitors in the industry; our liquidity and working capital requirements; the expected impact of new accounting standards; and our expectations regarding the impact of the coronavirus ("COVID-19") and variants thereof on our business, including on our research and development activities, preclinical studies and clinical trials, supply of drug product, and workforce.

Although we believe that we have a reasonable basis for each forward-looking statement contained in this report, we caution you that these statements are based on our estimates or projections of the future that are subject to known and unknown risks and uncertainties and other important factors that may cause our actual results, level of activity, performance or achievements expressed or implied by any forward-looking statement to differ. These risks, uncertainties and other factors include, among other things, our critical accounting policies; the ability of our preclinical studies to produce data sufficient to support the filing of global clinical trial applications and the timing thereof; our ability to continue to build and maintain the company infrastructure and personnel needed to achieve our goals; the clinical results and timing of our programs, which may not support further development of our product candidates; actions of regulatory agencies, which may affect the initiation, timing and progress of clinical trials; our effectiveness in managing current and future clinical trials and regulatory processes; the success of our platform in identifying viable candidates; the continued development and acceptance of nucleic acid therapeutics as a class of drugs; our ability to demonstrate the therapeutic benefits of our stereopure candidates in clinical trials, including our ability to develop candidates across multiple therapeutic modalities; our ability to obtain, maintain and protect intellectual property; our ability to enforce our patents against infringers and defend our patent portfolio against challenges from third parties; our ability to fund our operations and to raise additional capital as needed; competition from others developing therapies for similar uses; any impacts on our business as a result of or related to the COVID-19 pandemic, the conflict involving Russia and Ukraine, global economic uncertainty, rising inflation, rising interest rates or market disruptions, as well as other risks and uncertainties under the caption "Risk Factors" contained in this Quarterly Report on Form 10-Q and in other filings we make with the Securities and Exchange Commission (the "SEC").

Each forward-looking statement contained in this report is based on a combination of facts and factors currently known by us and our expectations of the future, about which we cannot be certain. As a result of these factors, we cannot assure you that the forward-looking statements in this Quarterly Report on Form 10-Q will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, these statements should not be regarded as representations or warranties by us or any other person that we will achieve our objectives and plans in any specified timeframe, or at all. We caution you not to place undue reliance on any forward-looking statement.

In addition, any forward-looking statement in this report represents our views only as of the date of this report and should not be relied upon as representing our views as of any subsequent date. We anticipate that subsequent events and developments may cause our views to change. Although we may elect to update these forward-looking statements publicly at some point in the future, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

The Wave Life Sciences Ltd. and Wave Life Sciences Pte. Ltd. names, the Wave Life Sciences mark, PRISM and the other registered and pending trademarks, trade names and service marks of Wave Life Sciences Ltd. appearing in this Quarterly Report on Form 10-Q are the property of Wave Life Sciences Ltd. This Quarterly Report on Form 10-Q also contains additional trade names, trademarks and service marks belonging to Wave Life Sciences Ltd. and to other companies. We do not intend our use or display of other parties' trademarks, trade names or service marks to imply, and such use or display should not be construed to imply, a relationship with, or endorsement or sponsorship of us by, these other parties. Solely for convenience, the trademarks and trade names in this Quarterly Report on Form 10-Q are referred to without the ® and ™ symbols, but such reference should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

PART I - FINANCIAL INFORMATION

Item 1. Financial Statements

WAVE LIFE SCIENCES LTD.
UNAUDITED CONSOLIDATED BALANCE SHEETS

(In thousands, except share amounts)

	June 30, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 172,974	$ 88,497
Prepaid expenses	9,012	7,932
Other current assets	2,722	2,108
Total current assets	184,708	98,537
Long-term assets:		
Property and equipment, net of accumulated depreciation of $40,423 and $37,846 as of June 30, 2023 and December 31, 2022, respectively	14,983	17,284
Operating lease right-of-use assets	24,805	26,843
Restricted cash	3,668	3,660
Other assets	1,821	62
Total long-term assets	45,277	47,849
Total assets	$ 229,985	$ 146,386
Liabilities, Series A preferred shares and shareholders' equity (deficit)		
Current liabilities:		
Accounts payable	$ 12,379	$ 16,915
Accrued expenses and other current liabilities	10,429	17,552
Current portion of deferred revenue	111,133	31,558
Current portion of operating lease liability	6,285	5,496
Total current liabilities	140,226	71,521
Long-term liabilities:		
Deferred revenue, net of current portion	104,540	79,774
Operating lease liability, net of current portion	28,875	32,118
Other liabilities	190	190
Total long-term liabilities	133,605	112,082
Total liabilities	$ 273,831	$ 183,603
Series A preferred shares, no par value; 3,901,348 shares issued and outstanding at June 30, 2023 and December 31, 2022	$ 7,874	$ 7,874
Shareholders' equity (deficit):		
Ordinary shares, no par value; 98,566,816 and 86,924,643 shares issued and outstanding at June 30, 2023 and December 31, 2022, respectively	$ 839,675	$ 802,833
Additional paid-in capital	124,601	119,442
Accumulated other comprehensive loss	(150)	(29)
Accumulated deficit	(1,015,846)	(967,337)
Total shareholders' deficit	$ (51,720)	$ (45,091)
Total liabilities, Series A preferred shares and shareholders' deficit	$ 229,985	$ 146,386

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

WAVE LIFE SCIENCES LTD.
UNAUDITED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(In thousands, except share and per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Revenue	$ 22,106	$ 375	$ 35,035	$ 2,125
Operating expenses:				
Research and development	33,314	29,733	64,293	57,203
General and administrative	12,265	12,806	24,500	25,180
Total operating expenses	45,579	42,539	88,793	82,383
Loss from operations	(23,473)	(42,164)	(53,758)	(80,258)
Other income, net:				
Dividend income and interest income, net	2,251	124	4,124	150
Other income, net	118	744	1,125	998
Total other income, net	2,369	868	5,249	1,148
Loss before income taxes	(21,104)	(41,296)	(48,509)	(79,110)
Income tax provision	—	—	—	—
Net loss	$ (21,104)	$ (41,296)	$ (48,509)	$ (79,110)
Net loss per share attributable to ordinary shareholders—basic and diluted	$ (0.20)	$ (0.62)	$ (0.47)	$ (1.25)
Weighted-average ordinary shares used in computing net loss per share attributable to ordinary shareholders—basic and diluted	105,462,414	66,479,293	103,768,971	63,514,426
Other comprehensive loss:				
Net loss	$ (21,104)	$ (41,296)	$ (48,509)	$ (79,110)
Foreign currency translation	(100)	(142)	(121)	(228)
Comprehensive loss	$ (21,204)	$ (41,438)	$ (48,630)	$ (79,338)

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

WAVE LIFE SCIENCES LTD.
UNAUDITED CONSOLIDATED STATEMENTS OF SERIES A PREFERRED SHARES AND SHAREHOLDERS' EQUITY (DEFICIT)

(In thousands, except share amounts)

	Series A Preferred Shares		Ordinary Shares		Additional Paid-In-	Accumulated Other Comprehensive	Accumulated	Total Shareholders'
	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Equity (Deficit)
Balance at December 31, 2021	3,901,348	$ 7,874	59,841,116	$ 749,851	$ 87,980	$ 181	$ (805,514)	$ 32,498
Issuance of ordinary shares pursuant to the at-the-market equity program, net	—	—	458,092	1,167	—	—	—	1,167
Share-based compensation	—	—	—	—	3,971	—	—	3,971
Vesting of RSUs	—	—	468,226	—	—	—	—	—
Option exercises	—	—	15,000	37	—	—	—	37
Issuance of ordinary shares under the ESPP	—	—	77,534	174	—	—	—	174
Other comprehensive loss	—	—	—	—	—	(86)	—	(86)
Net loss	—	—	—	—	—	—	(37,814)	(37,814)
Balance at March 31, 2022	3,901,348	$ 7,874	60,859,968	$ 751,229	$ 91,951	$ 95	$ (843,328)	$ (53)
Issuance of ordinary shares, net of offering costs	—	—	25,464,483	51,220	—	—	—	51,220
Issuance of pre-funded warrants, net of offering costs	—	—	—	—	14,268	—	—	14,268
Share-based compensation	—	—	—	—	6,950	—	—	6,950
Vesting of RSUs	—	—	400,207	—	—	—	—	—
Other comprehensive loss	—	—	—	—	—	(142)	—	(142)
Net loss	—	—	—	—	—	—	(41,296)	(41,296)
Balance at June 30, 2022	3,901,348	$ 7,874	86,724,658	$ 802,449	$ 113,169	$ (47)	$ (884,624)	$ 30,947

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

WAVE LIFE SCIENCES LTD.
UNAUDITED CONSOLIDATED STATEMENTS OF SERIES A PREFERRED SHARES AND SHAREHOLDERS' EQUITY (DEFICIT)
CONTINUED

(In thousands, except share amounts)

	Series A Preferred Shares		Ordinary Shares		Additional Paid-In-	Accumulated Other Comprehensive	Accumulated	Total Shareholders'
	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Equity (Deficit)
Balance at December 31, 2022	3,901,348	$ 7,874	86,924,643	$ 802,833	$ 119,442	$ (29)	$ (967,337)	$ (45,091)
Issuance of ordinary shares	—	—	10,683,761	34,623	—	—	—	34,623
Share-based compensation	—	—	—	—	2,750	—	—	2,750
Vesting of RSUs	—	—	363,161	—	—	—	—	—
Option exercises	—	—	181	1	—	—	—	1
Issuance of ordinary shares under the ESPP	—	—	133,098	429	—	—	—	429
Other comprehensive loss	—	—	—	—	—	(21)	—	(21)
Net loss	—	—	—	—	—	—	(27,405)	(27,405)
Balance at March 31, 2023	3,901,348	$ 7,874	98,104,844	$ 837,886	$ 122,192	$ (50)	$ (994,742)	$ (34,714)
Issuance of ordinary shares pursuant to the at-the-market equity program, net	—	—	429,051	1,704	—	—	—	1,704
Share-based compensation	—	—	—	—	2,409	—	—	2,409
Vesting of RSUs	—	—	9,234	—	—	—	—	—
Option exercises			23,687	85				85
Other comprehensive loss	—	—			—	(100)	—	(100)
Net loss	—	—	—	—	—	—	(21,104)	(21,104)
Balance at June 30, 2023	3,901,348	$ 7,874	98,566,816	$ 839,675	$ 124,601	$ (150)	$ (1,015,846)	$ (51,720)

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

WAVE LIFE SCIENCES LTD.
UNAUDITED CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Six Months Ended June 30,	
	2023	**2022**
Cash flows from operating activities		
Net loss	$ (48,509)	$ (79,110)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Amortization of right-of-use assets	2,038	1,593
Depreciation of property and equipment	2,722	3,425
Share-based compensation expense	5,159	10,921
Changes in operating assets and liabilities:		
Prepaid expenses	(1,080)	1,188
Other assets	(2,373)	(1,946)
Accounts payable	(4,456)	3,264
Accrued expenses and other current liabilities	(7,123)	(3,776)
Deferred revenue	104,341	(1,855)
Operating lease liabilities	(2,454)	(2,399)
Net cash provided by (used in) operating activities	48,265	(68,695)
Cash flows from investing activities		
Purchases of property and equipment	(561)	(700)
Proceeds from the sale property and equipment	—	106
Purchase of short-term investments	—	(50,000)
Proceeds from maturity of short-term investments	—	25,000
Net cash used in investing activities	(561)	(25,594)
Cash flows from financing activities		
Proceeds from issuance of ordinary shares, net of offering costs	34,623	51,464
Proceeds from issuance of pre-funded warrants, net of offering costs	—	14,336
Proceeds from issuance of ordinary shares pursuant to the at-the-market equity program, net of offering costs	1,764	1,105
Proceeds from the exercise of share options	86	37
Proceeds from the ESPP	429	174
Net cash provided by financing activities	36,902	67,116
Effect of foreign exchange rates on cash, cash equivalents and restricted cash	(121)	(228)
Net increase (decrease) in cash, cash equivalents and restricted cash	84,485	(27,401)
Cash, cash equivalents and restricted cash, beginning of period	92,157	154,215
Cash, cash equivalents and restricted cash, end of period	$ 176,642	$ 126,814
Supplemental disclosure of cash flow information		
Increase in operating lease right-of-use assets and lease liabilities related to lease extension	$ —	$ 12,006
Offering costs in accounts payable at period end	$ 60	$ 311

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

1. THE COMPANY

Organization

Wave Life Sciences Ltd. (together with its subsidiaries, "Wave" or the "Company") is a clinical-stage RNA medicines company committed to delivering life-changing treatments for people battling devastating diseases. Using PRISM, Wave's proprietary discovery and drug development platform that enables the precise design, optimization, and production of novel stereopure oligonucleotides, Wave is working to develop best- or first-in-class medicines that target the transcriptome (the full set of ribonucleic acid ("RNA") molecules produced from the human genome) to treat genetically defined diseases with a high degree of unmet need.

The Company was incorporated in Singapore on July 23, 2012 and has its principal U.S. office in Cambridge, Massachusetts. The Company was incorporated with the purpose of combining two commonly held companies, Wave Life Sciences USA, Inc. ("Wave USA"), a Delaware corporation (formerly Ontorii, Inc.), and Wave Life Sciences Japan, Inc. ("Wave Japan"), a company organized under the laws of Japan (formerly Chiralgen., Ltd.), which occurred on September 13, 2012. On May 31, 2016, Wave Life Sciences Ireland Limited ("Wave Ireland") was formed as a wholly-owned subsidiary of Wave Life Sciences Ltd. On April 3, 2017, Wave Life Sciences UK Limited ("Wave UK") was formed as a wholly-owned subsidiary of Wave Life Sciences Ltd.

The Company's primary activities since inception have been developing and evolving PRISM to design, develop and commercialize oligonucleotide therapeutics, advancing the Company's differentiated portfolio, building the Company's research, development and manufacturing capabilities, advancing programs into the clinic, furthering clinical development of such clinical-stage programs, building the Company's intellectual property, and assuring adequate capital to support these activities.

Liquidity

Since its inception, the Company has not generated any product revenue and has incurred recurring net losses. To date, the Company has primarily funded its operations through private placements of debt and equity securities, public and other registered offerings of its equity securities and collaborations with third parties. Until the Company can generate significant revenue from product sales, if ever, the Company expects to continue to finance operations through a combination of public or private equity or debt financings or other sources, which may include collaborations with third parties. Adequate additional financing may not be available to the Company on acceptable terms, or at all. The inability to raise capital as and when needed would have a negative impact on the Company's financial condition and ability to pursue its business strategy.

As of June 30, 2023, the Company had cash and cash equivalents of $173.0 million. The Company expects that its existing cash and cash equivalents will be sufficient to fund its operations for at least the next twelve months. The Company has based this expectation on assumptions that may prove to be incorrect, and the Company may use its available capital resources sooner than it currently expects. If the Company's anticipated operating results are not achieved in future periods, planned expenditures may need to be further reduced in order to extend the time period over which the then-available resources would be able to fund the Company's operations. In addition, the Company may elect to raise additional funds before it needs them if the conditions for raising capital are favorable due to market conditions or strategic considerations, even if the Company expects it has sufficient funds for its current or future operating plans.

Risks and Uncertainties

The Company is subject to risks common to companies in the biotechnology industry including, but not limited to, new technological innovations, protection of proprietary technology, maintaining internal manufacturing capabilities, dependence on key personnel, compliance with government regulations and the need to obtain additional financing. The Company's therapeutic programs will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval, prior to commercialization of any product candidates. These efforts require significant amounts of additional capital, adequate personnel infrastructure and extensive compliance-reporting capabilities. There can be no assurance that the Company's research and development efforts will be successful, that adequate protection for the Company's intellectual property will be obtained, that any products developed will obtain necessary government regulatory approval or that any approved products will be commercially viable. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will generate significant revenue from product sales. The Company operates in an environment of rapid change in technology and substantial competition from pharmaceutical and biotechnology companies.

Basis of Presentation

The Company has prepared the accompanying consolidated financial statements in conformity with generally accepted accounting principles in the United States ("U.S. GAAP") and in U.S. dollars.

2. SIGNIFICANT ACCOUNTING POLICIES

The significant accounting policies described in the Company's audited financial statements as of and for the year ended December 31, 2022, and the notes thereto, which are included in the Company's Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission ("SEC") on March 23, 2023, as amended (the "2022 Annual Report on Form 10-K"), have had no material changes during the six months ended June 30, 2023, except as described below.

Use of Estimates

The Company's consolidated financial statements are prepared in accordance with U.S. GAAP. The preparation of the Company's financial statements and related disclosures requires the Company to make estimates and assumptions that affect the reported amount of assets, liabilities, revenue, costs and expenses and related disclosures. Management considers many factors in selecting appropriate financial accounting policies and in developing the estimates and assumptions that are used in the preparation of the financial statements. Management must apply significant judgment in this process. The Company believes that its revenue recognition policy, particularly (a) assessing the number of performance obligations; (b) determining the transaction price; (c) allocating the transaction price to the performance obligations in the contract; and (d) determining the pattern over which performance obligations are satisfied, including estimates to complete performance obligations, and the assumptions and estimates used in the Company's analysis of contracts with contract research organizations ("CROs") and contract manufacturing organizations ("CMOs") to estimate the contract expense, involve a greater degree of judgment, and therefore the Company considers them to be its critical accounting policies. The Company evaluates its estimates and assumptions on an ongoing basis. The Company's actual results may differ from these estimates under different assumptions and conditions.

Unaudited Interim Financial Data

The accompanying interim consolidated balance sheet as of June 30, 2023, the related interim consolidated statements of operations and comprehensive loss for the three and six months ended June 30, 2023 and 2022, the consolidated statements of Series A preferred shares and shareholders' equity (deficit) for the three months ended March 31, June 30, 2023 and 2022, the consolidated statements of cash flows for the six months ended June 30, 2023 and 2022, and the related interim information contained within the notes to the unaudited consolidated financial statements have been prepared in accordance with the rules and regulations of the SEC for interim financial information. Accordingly, they do not include all of the information and the notes required by U.S. GAAP for complete financial statements. The financial data and other information disclosed in these notes related to the three and six months ended June 30, 2023 and 2022 are unaudited. In the opinion of management, the unaudited interim consolidated financial statements reflect all adjustments, consisting of normal and recurring adjustments, necessary for the fair presentation of the Company's financial position and results of operations for the three and six months ended June 30, 2023 and 2022. The results of operations for the interim periods are not necessarily indicative of the results to be expected for the year ending December 31, 2023 or any other interim period or future year or period.

3. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

Accrued expenses and other current liabilities consist of the following:

	June 30, 2023	December 31, 2022
	(in thousands)	
Accrued compensation	$ 6,898	$ 12,287
Accrued expenses related to CROs and CMOs	2,662	3,516
Accrued expenses and other current liabilities	869	1,749
Total accrued expenses and other current liabilities	$ 10,429	$ 17,552

4. SHARE-BASED COMPENSATION

The Wave Life Sciences Ltd. 2021 Equity Incentive Plan was approved by the Company's shareholders and went into effect on August 10, 2021 and was amended effective as of August 9, 2022 (as amended, the "2021 Plan"). The 2021 Plan serves as the successor to the Wave Life Sciences Ltd. 2014 Equity Incentive Plan, as amended (the "2014 Plan"), such that outstanding awards granted under the 2014 Plan continue to be governed by the terms of the 2014 Plan, but no awards may be made under the 2014 Plan after August 10, 2021. The aggregate number of ordinary shares authorized for issuance of awards under the 2021 Plan was originally 5,450,000 ordinary shares, and was subsequently increased to 11,450,000 in August 2022, plus the number of ordinary shares underlying any awards under the 2014 Plan that are forfeited, cancelled or otherwise terminated (other than by exercise or withheld by the Company to satisfy any tax withholding obligation) on or after August 10, 2021.

The 2021 Plan authorizes (and the 2014 Plan previously authorized) the board of directors or a committee of the board of directors to, among other things, grant non-qualified share options, restricted awards, which include restricted shares and restricted share units ("RSUs"), and performance awards to eligible employees and directors of the Company. The Company accounts for grants to its non-employee directors as grants to employees.

Options generally vest over periods of one to four years, and options that are forfeited or cancelled are available to be granted again. The contractual life of options is generally five or ten years from the grant date. RSUs can be time-based or performance-based. Time-based RSUs generally vest over a period of one to four years. The vesting of performance-based RSUs is contingent on the achievement of certain performance milestones. Any RSUs that are forfeited are available to be granted again.

During the six months ended June 30, 2023, the Company granted an aggregate of 4,984,750 options and 101,700 time-based RSUs to employees.

As of June 30, 2023, 1,756,326 ordinary shares remained available for future grant under the 2021 Plan.

The Wave Life Sciences Ltd. 2019 Employee Share Purchase Plan ("ESPP") allows full-time and certain part-time employees to purchase the Company's ordinary shares at a discount to fair market value. Eligible employees may enroll in a six-month offering period beginning every January 15th and July 15th. Ordinary shares are purchased at a price equal to 85% of the lower of the fair market value of the Company's ordinary shares on the first business day or the last business day of an offering period. During the six months ended June 30, 2023, 133,098 ordinary shares were issued under the ESPP. As of June 30, 2023, there were 583,315 ordinary shares available for issuance under the ESPP.

5. COLLABORATION AGREEMENTS

GSK Collaboration and Equity Agreements

On December 13, 2022, Wave USA and Wave UK entered into a Collaboration and License Agreement (the "GSK Collaboration Agreement") with GlaxoSmithKline Intellectual Property (No. 3) ("GSK"). Pursuant to the GSK Collaboration Agreement, Wave and GSK have agreed to collaborate on the research, development, and commercialization of oligonucleotide therapeutics, including an exclusive global license to WVE-006. The discovery collaboration component has an initial four-year research term and combines Wave's proprietary discovery and drug development platform, PRISM, with GSK's unique insights from human genetics and its global development and commercial capabilities. On January 27, 2023, the GSK Collaboration Agreement became effective, and GSK paid Wave an upfront payment of $120.0 million.

Simultaneously with the execution of the GSK Collaboration Agreement, Wave entered into a Share Purchase Agreement (the "SPA") on December 13, 2022, with Glaxo Group Limited ("GGL"), an affiliate of GSK, pursuant to which Wave agreed to sell 10,683,761 of its ordinary shares to GGL at a purchase price of $4.68 per share (the "GSK Equity Investment"). The GSK Equity Investment closed on January 26, 2023, following the completion of customary closing conditions. The ordinary shares purchased by GGL are subject to lock-up and standstill restrictions and carry certain registration rights, customary for transactions of this kind. The Company did not incur any material costs in connection with the issuance of the ordinary shares under the SPA.

The GSK Collaboration Agreement has three components:

1. An exclusive global license for GSK to WVE-006, the Company's preclinical, first-in-class A-to-I(G) RNA editing candidate for alpha-1 antitrypsin deficiency, with development and commercialization responsibilities transferring to GSK after the Company completes the first-in-patient study (the "AATD Collaboration"). The Company will be responsible for preclinical, regulatory, manufacturing, and clinical activities for WVE-006 through the initial Phase 1/2 study, at the Company's sole cost. Thereafter, GSK will be responsible for advancing WVE-006 through pivotal studies, registration, and global commercialization at GSK's sole cost;
2. A discovery research collaboration which enables GSK to advance up to eight programs leveraging PRISM and the Company's oligonucleotide expertise and discovery capabilities (the "Discovery Research Collaboration"); and
3. A discovery collaboration which enables the Company to advance up to three programs leveraging targets informed by GSK's novel insights ("Wave's Collaboration Programs").

Under the GSK Collaboration Agreement, each party grants to the other party certain licenses to the collaboration products to enable the other party to perform its obligations and exercise its rights under the GSK Collaboration Agreement, including license grants to enable each party to conduct research, development and commercialization activities pursuant to the terms of the GSK Collaboration Agreement. The parties' exclusivity obligations to each other are limited on a target-by-target basis with regard to targets in the collaboration. GSK may terminate the GSK Collaboration Agreement for convenience, in its entirety or on a target-by-target basis. Subject to certain exceptions, each party has the right to terminate the GSK Collaboration Agreement on a target-by-target basis if the other party, or a related party, challenges the patentability, enforceability or validity of any patents within the licensed technology that cover any product that is subject to the GSK Collaboration Agreement. In the event of any material breach of the GSK Collaboration Agreement by a party, subject to cure rights, the other party may terminate the GSK Collaboration Agreement in its entirety if the breach relates to all targets or on a target-by-target basis if the breach relates to a specific target. In the event that GSK and its affiliates cease development, manufacturing and commercialization activities with respect to compounds or products subject to the GSK Collaboration Agreement and directed to a particular target, the Company may terminate the GSK Collaboration Agreement with respect to such target. Either party may terminate the GSK Collaboration Agreement for the other party's insolvency. In certain termination circumstances, the Company would receive a license from GSK to continue researching, developing and manufacturing certain products.

The GSK Collaboration Agreement, unless terminated earlier, will continue until the date on which: (i) with respect to a validation target, the date on which such validation target is not advanced into a collaboration program; or (ii) with respect to a collaboration target, the royalty term has expired for all collaboration products directed to the applicable collaboration target. The GSK Collaboration Agreement includes options to extend the research term for up to three additional years, which would increase the number of programs available to both parties. The Company will lead all preclinical research for GSK and the Company's collaboration programs up to investigational new drug ("IND")-enabling studies. The Company will lead IND-enabling studies, clinical development and commercialization for the Company's collaboration programs. GSK collaboration programs will transfer to GSK for IND-enabling studies, clinical development and commercialization.

The GSK Collaboration Agreement is managed by a joint steering committee in which both parties are represented equally. In addition, the AATD Collaboration is overseen by a joint development committee, a joint patent committee advises on intellectual property activities, and the Discovery Research Collaboration is overseen by a joint research committee. Both parties are represented equally for these committees and report to the joint steering committee.

The Company assessed this arrangement in accordance with ASC Topic 606, Revenue from Contracts with Customers ("ASC 606") and concluded that the contract counterparty, GSK, is a customer for the AATD Collaboration prior to GSK exercising its option and, for the Discovery Research Collaboration programs during the target validation research term. The Company identified the following material promises under the arrangement: (1) the exclusive global license for WVE-006; (2) the research and development services for WVE-006 through the Phase 1/2 study; (3) the discovery research services under the Discovery Research Collaboration to perform target validation programs; (4) research and development license for the Discovery Research Collaboration; and (5) the research and development services for the GSK collaboration programs through completion of a candidate selection. The research and development services for WVE-006 were determined to not be distinct from the exclusive global license and should therefore be combined into a single performance obligation for the AATD Collaboration. The research and development services for the Discovery Research Collaboration were determined to not be distinct from the research and development license for the Discovery Research Collaboration and should therefore be combined into a single performance obligation. In addition, the Company determined that the option to advance up to eight programs from the Discovery Research Collaboration was priced at fair value and did not provide a material right to GSK.

Based on these assessments, the Company identified two performance obligations in the GSK Collaboration Agreement: (1) AATD Collaboration consisting of the research and development services through completion of the Phase 1/2 study and research and development license for WVE-006 and (2) Discovery Research Collaboration which consists of research and development services for validating the targets and license for research and development license for targets.

At the outset of the arrangement, the transaction price included fixed consideration of the $120.0 million upfront, the $15.4 million in premium related to the GSK Equity Investment and the estimated variable consideration related to the additional target validation research funding. The Company allocated the estimated variable consideration to the Discovery Research Collaboration programs and then allocated the fixed consideration to the performance obligations on a relative standalone selling price basis. The Company determined that the GSK Collaboration Agreement did not contain a significant financing component. The program initiation fees to research and preclinically develop the GSK collaboration programs and the additional potential milestone payments were excluded from the transaction price, as all milestone amounts were fully constrained at the inception of the GSK Collaboration Agreement. The Company will reevaluate the transaction price at the end of each reporting period, and as uncertain events are resolved or other changes in circumstances occur, the Company will adjust its estimate of the transaction price.

The Company developed the estimated standalone selling price for the global license for WVE-006, under the AATD Collaboration, using a discounted cash flow model. For the performance obligation associated with the research and development services under the Discovery Research Collaboration and the research and development services for WVE-006 under the AATD Collaboration, the Company determined the standalone selling price using estimates of the costs to perform the research and development services, including expected internal and external costs for services and supplies, adjusted to reflect a profit margin. The total estimated cost of the research and development services reflected the nature of the services to be performed and the Company's best estimate of the length of time required to perform the services.

Revenue associated with the AATD Collaboration performance obligation is being recognized as the research and development services are provided using an input measure, according to the costs incurred and the total costs expected to be incurred to satisfy the performance obligation. The revenue associated with the Discovery Research Collaboration performance obligation is being recognized as the research and development services are provided using an input measure, according to the costs incurred and the total costs expected to be incurred to satisfy the performance obligation. The amounts received that have not yet been recognized as revenue are recorded in deferred revenue on the Company's consolidated balance sheet. Additional funding related to the Company's research activities related to Discovery Research Collaboration will be recorded as accounts receivable when contractually enforceable and recorded as deferred revenue, or as revenue as the services are provided.

During the three and six months ended June 30, 2023, the Company recognized revenue of approximately $20.8 million and $33.1 million, respectively, under the GSK Collaboration Agreement using the input method described above.

The aggregate amount of the transaction price allocated to the Company's unsatisfied and partially unsatisfied performance obligations and recorded in deferred revenue on June 30, 2023 is approximately $106.3 million, of which $81.2 million is included in current liabilities and $25.1 million is included in long-term liabilities.

Takeda Collaboration and Equity Agreements

In February 2018, Wave USA and Wave UK entered into a global strategic collaboration (the "Takeda Collaboration") with Takeda Pharmaceutical Company Limited ("Takeda"), pursuant to which Wave USA, Wave UK and Takeda agreed to collaborate on the research, development and commercialization of oligonucleotide therapeutics for disorders of the Central Nervous System ("CNS"). The Takeda Collaboration provides the Company with at least $230.0 million in committed cash and Takeda with the option to co-develop and co-commercialize the Company's CNS development programs in (1) Huntington's disease ("HD"); (2) amyotrophic lateral sclerosis ("ALS") and frontotemporal dementia ("FTD"); and (3) the Company's discovery-stage program targeting *ATXN3* for the treatment of spinocerebellar ataxia 3 ("SCA3") (collectively, "Category 1 Programs"). In addition, the Takeda Collaboration provided Takeda the right to exclusively license multiple preclinical programs for CNS disorders, including Alzheimer's disease and Parkinson's disease (collectively, "Category 2 Programs"). In April 2018, the Takeda Collaboration became effective and Takeda paid the Company $110.0 million as an upfront payment. Takeda also agreed to fund the Company's research and preclinical activities in the amount of $60.0 million during the four-year research term and to reimburse the Company for any collaboration-budgeted research and preclinical expenses incurred by Wave that exceed that amount.

Simultaneously with Wave USA and Wave UK's entry into the collaboration and license agreement with Takeda (the "Takeda Collaboration Agreement"), the Company entered into a share purchase agreement with Takeda (the "Takeda Equity Agreement," and together with the Takeda Collaboration Agreement, the "Takeda Agreements") pursuant to which it agreed to sell to Takeda 1,096,892 of its ordinary shares at a purchase price of $54.70 per share. In April 2018, the Company closed the Takeda Equity Agreement and received aggregate cash proceeds of $60.0 million. The Company did not incur any material costs in connection with the issuance of the shares.

With respect to Category 1 Programs, the Company will be responsible for researching and developing products and companion diagnostics for Category 1 Programs through completion of the first proof of mechanism study for such products. Takeda will have an exclusive option for each target and all associated products and companion diagnostics for such target, which it may exercise at any time through completion of the proof of mechanism study. If Takeda exercises this option, the Company will receive an opt-in payment and will lead manufacturing and joint clinical co-development activities and Takeda will lead joint co-commercial activities in the United States and all commercial activities outside of the United States. Global costs and potential profits will be shared 50:50 and the Company will be eligible to receive development and commercial milestone payments. In addition to its 50% profit share, the Company is eligible to receive option exercise fees and development and commercial milestone payments for each of the Category 1 Programs.

With respect to Category 2 Programs, the Company granted Takeda the right to exclusively license multiple preclinical programs during a four-year research term (subject to limited extension for programs that were initiated prior to the expiration of the research term, in accordance with the Takeda Collaboration Agreement) ("Category 2 Research Term"). During that term, the Takeda Collaboration provided that the parties may collaborate on preclinical programs for up to six targets at any one time. The Company was responsible for researching and preclinically developing products and companion diagnostics directed to the agreed upon targets through completion of Investigational New Drug application ("IND")-enabling studies in the first major market country. Thereafter, Takeda would have an exclusive worldwide license to develop and commercialize products and companion diagnostics directed to such targets, subject to the Company's retained rights to lead manufacturing activities for products directed to such targets. Takeda agreed to fund the Company's research and preclinical activities in the amount of $60.0 million during the research term and reimburse the Company for any collaboration-budgeted research and preclinical expenses incurred by the Company that exceeded that amount. The Company was also eligible to receive tiered high single-digit to mid-teen royalties on Takeda's global commercial sales of products from each Category 2 Program.

Under the Takeda Collaboration Agreement, each party granted to the other party specific intellectual property licenses to enable the other party to perform its obligations and exercise its rights under the Takeda Collaboration Agreement, including license grants to enable each party to conduct research, development and commercialization activities pursuant to the terms of the Takeda Collaboration Agreement.

The term of the Takeda Collaboration Agreement commenced on April 2, 2018 and, unless terminated earlier, will continue until the date on which: (i) with respect to each Category 1 Program target for which Takeda does not exercise its option, the expiration or termination of the development program with respect to such target; (ii) with respect to each Category 1 Program target for which Takeda exercises its option, the date on which neither party is researching, developing or manufacturing any products or companion diagnostics directed to such target; or (iii) with respect to each Category 2 Program target, the date on which royalties are no longer payable with respect to products directed to such target.

Takeda may terminate the Takeda Collaboration Agreement for convenience on 180 days' notice, in its entirety or on a target-by-target basis. Subject to certain exceptions, each party has the right to terminate the Takeda Collaboration Agreement on a target-by-target basis if the other party, or a third party related to such party, challenges the patentability, enforceability or validity of any patents within the licensed technology that cover any product or companion diagnostic that is subject to the Takeda Collaboration Agreement. In the event of any material breach of the Takeda Collaboration Agreement by a party, subject to cure rights, the other party may terminate the Takeda Collaboration Agreement in its entirety if the breach relates to all targets or on a target-by-target basis if the breach relates to a specific target. In the event that Takeda and its affiliates cease development, manufacturing and commercialization activities with respect to compounds or products subject to the Takeda Collaboration Agreement and directed to a particular target, the Company may terminate the Takeda Collaboration Agreement with respect to such target. Either party may terminate the Takeda Collaboration Agreement for the other party's insolvency. In certain termination circumstances, the Company would receive a license from Takeda to continue researching, developing and manufacturing certain products, and companion diagnostics.

The Takeda Collaboration is managed by a joint steering committee in which both parties are represented equally. The joint steering committee is tasked with overseeing the scientific progression of each Category 1 Program and, prior to the Amendment (discussed below), the Category 2 Programs.

The Company assessed this arrangement in accordance with ASC 606 and concluded that the contract counterparty, Takeda, is a customer for Category 1 Programs prior to Takeda exercising its option, and for Category 2 Programs during the Category 2 Research Term. The Company identified the following material promises under the arrangement: (1) the non-exclusive, royalty-free research and development license for each Category 1 Program; (2) the research and development services for each Category 1 Program through completion of the first proof of mechanism study; (3) the exclusive option to license, co-develop and co-commercialize each Category 1 Program; (4) the right to exclusively license the Category 2 Programs; and (5) the research and preclinical development services of the Category 2 Programs through completion of IND-enabling studies. The research and development services for each Category 1 Program were determined to not be distinct from the research and development license and should therefore be combined into a single performance obligation for each Category 1 Program. The research and preclinical development services for the Category 2 Programs were determined to not be distinct from the exclusive licenses for the Category 2 Programs and therefore were combined into a single performance obligation.

Additionally, the Company determined that the exclusive option for each Category 1 Program was priced at a discount, and, as such, provide material rights to Takeda, representing three separate performance obligations. Based on these assessments, the Company identified seven performance obligations in the Takeda Collaboration Agreement: (1) research and development services through completion of the first proof of mechanism and non-exclusive research and development license for HD; (2) research and development services through completion of the first proof of mechanism and non-exclusive research and development license for ALS and FTD; (3) research and development services through completion of the first proof of mechanism and non-exclusive research and development license for SCA3; (4) the material right provided for the exclusive option to license, co-develop and co-commercialize HD; (5) the material right provided for the exclusive option to license, co-develop and co-commercialize ALS and FTD; (6) the material right provided for the exclusive option to license, co-develop and co-commercialize SCA3; and (7) the research and preclinical development services and right to exclusively license the Category 2 Programs.

At the outset of the arrangement, the transaction price included the $110.0 million upfront consideration received and the $60.0 million of committed research and preclinical funding for the Category 2 Programs. The Company determined that the Takeda Collaboration Agreement did not contain a significant financing component. The option exercise fees to license, co-develop and co-commercialize each Category 1 Program that may be received are excluded from the transaction price until each customer option is exercised. The potential milestone payments were excluded from the transaction price, as all milestone amounts were fully constrained at the inception of the Takeda Collaboration Agreement. The Company will reevaluate the transaction price at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur, if necessary, will adjust its estimate of the transaction price.

The Company allocated the transaction price to the performance obligations on a relative standalone selling price basis. For the performance obligations associated with the research and development services through completion of the first proof of mechanism and non-exclusive research and development license for HD; the research and development services through completion of the first proof of mechanism and non-exclusive research and development license for ALS and FTD; the research and development services through completion of the first proof of mechanism and non-exclusive research and development license for SCA3; and the research and preclinical development services and right to exclusively license the Category 2 Programs, the Company determined the standalone selling price using estimates of the costs to perform the research and development services, including expected internal and external costs for services and supplies, adjusted to reflect a profit margin. The total estimated cost of the research and development services reflected the nature of the services to be performed and the Company's best estimate of the length of time required to perform the services. For the performance obligations associated with the material right provided for the exclusive option to license, co-develop and co-commercialize HD; the material right provided for the exclusive option to license, co-develop and co-commercialize ALS and FTD; and the material right provided for the exclusive option to license, co-develop and co-commercialize SCA3, the Company estimated the standalone fair value of the option to license each Category 1 Program utilizing an adjusted market assessment approach, and determined that any standalone fair value in excess of the amounts to be paid by Takeda associated with each option represented a material right.

Revenue associated with the research and development services for each Category 1 Program performance obligation is being recognized as the research and development services are provided using an input method, according to the costs incurred on each Category 1 Program and the total costs expected to be incurred to satisfy each Category 1 Program performance obligation. Prior to the Amendment (as defined below), revenue associated with the research and preclinical development services for the Category 2 Programs performance obligation was recognized as the research and preclinical development services are provided using an input method, according to the costs incurred on Category 2 Programs and the total costs expected to be incurred to satisfy the performance obligation. The amount allocated to the material right for each Category 1 Program option will be recognized on the date that Takeda exercises each respective option, or immediately as each option expires unexercised. The amounts received that have not yet been recognized as revenue are recorded in deferred revenue on the Company's consolidated balance sheet.

On October 15, 2021, Wave USA, Wave UK and Takeda entered into the Second Amendment to the Takeda Collaboration Agreement (the "Amendment"), which discontinued the Category 2 component of the Takeda Collaboration. The Category 1 Programs under the Collaboration Agreement remain in effect and are unchanged by the Amendment. Pursuant to the Amendment, Takeda agreed to pay the Company an additional $22.5 million as full payment for reimbursable Category 2 Programs collaboration-budgeted research and preclinical expenses. The Company received this payment from Takeda related to the Category 2 component and recognized the full amount as collaboration revenue in the year ended December 31, 2021.

Through June 30, 2023, the Company had recognized revenue of $83.2 million as collaboration revenue under the Takeda Collaboration Agreement in the Company's consolidated statements of operations and comprehensive loss. During the three and six months ended June 30, 2023, the Company recognized revenue of $1.3 million and $2.0 million under the Takeda Collaboration Agreement, respectively. During the three and six months ended June 30, 2022, the Company recognized revenue of approximately $0.3 million and $1.9 million under the Takeda Collaboration Agreement, respectively.

The aggregate amount of the transaction price allocated to the Company's unsatisfied and partially unsatisfied performance obligations and recorded in deferred revenue as of December 31, 2022 was $111.3 million, of which approximately $31.6 million was included in current liabilities and $79.8 million was included in long-term liabilities. The aggregate amount of the transaction price allocated to the Company's unsatisfied and partially unsatisfied performance obligations and recorded in deferred revenue at June 30, 2023 is $109.3 million, of which $29.9 million is included in current liabilities and $79.4 million is included in long-term liabilities. The Company expects to recognize revenue for the portion of the deferred revenue that relates to the research and development services for each Category 1 Program as costs are incurred, over the remaining research term. The Company expects to recognize revenue for the portion of the deferred revenue that relates to the material right for each Category 1 Program option upon Takeda's exercise or termination of such option, or immediately as each option expires unexercised.

6. NET LOSS PER ORDINARY SHARE

The Company applies the two-class method to calculate its basic and diluted net loss per share attributable to ordinary shareholders, as its Series A preferred shares are participating securities. The two-class method is an earnings allocation formula that treats a participating security as having rights to earnings that otherwise would have been available to ordinary shareholders.

As of June 30, 2023, there are 7,093,656 vested and exercisable pre-funded warrants ("Pre-Funded Warrants") outstanding to purchase ordinary shares for the exercise price of $0.0001 per share, provided that, unless and until the Company obtains shareholder approval for the issuance of the shares underlying the Pre-Funded Warrants, a holder will not be entitled to exercise any portion of any Pre-Funded Warrant, which, upon giving effect to such exercise, would cause (i) the aggregate number of our ordinary shares beneficially owned by the holder (together with its affiliates) to exceed 19.99% of the number of our ordinary shares outstanding immediately after giving effect to the exercise, or (ii) the combined voting power of our securities beneficially owned by the holder (together with its affiliates) to exceed 19.99% of the combined voting power of all of our securities then outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrants. The Pre-Funded Warrants are included in the weighted-average shares outstanding used in the calculation of basic net loss per share as the exercise price is negligible and the warrants are fully vested and exercisable.

Basic loss per share is computed by dividing net loss attributable to ordinary shareholders and Pre-Funded Warrant holders by the weighted-average number of ordinary shares and Pre-Funded Warrants outstanding.

The Company's potentially dilutive shares, which include outstanding share options to purchase ordinary shares, RSUs, and Series A preferred shares, are considered to be ordinary share equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive.

The following potential ordinary shares, presented based on amounts outstanding at each period end, were excluded from the calculation of diluted net loss per share attributable to ordinary shareholders for the periods indicated because including them would have had an anti-dilutive effect:

	As of June 30,	
	2023	2022
Options to purchase ordinary shares	14,176,822	8,526,312
RSUs	626,465	979,850
Series A preferred shares	3,901,348	3,901,348

Additionally, for the periods presented, the two-class method does not impact the net loss per ordinary share as the Company was in a net loss position for each of the periods presented and holders of Series A preferred shares do not participate in losses.

7. INCOME TAXES

During the three and six months ended June 30, 2023 and 2022, the Company recorded no income tax provision. The Company maintained a full valuation allowance for the three and six months ended June 30, 2023 and 2022 in all jurisdictions due to uncertainty regarding future taxable income.

8. GEOGRAPHIC DATA

Substantially all of the Company's long-lived assets were located in the United States as of June 30, 2023 and December 31, 2022.

9. RELATED PARTY TRANSACTIONS

The Company had the following related party transactions:

- In 2012, the Company entered into a consulting agreement for scientific advisory services with Dr. Gregory L. Verdine, one of the Company's founders and a member of the Company's board of directors. The consulting agreement does not have a specific term and may be terminated by either party upon 14 days' prior written notice. Pursuant to the consulting agreement, the Company pays Dr. Verdine approximately $13 thousand per month, plus reimbursement for certain expenses. In October 2022, the compensation committee of the Company's board of directors granted Dr. Verdine a non-qualified share option for 163,467 ordinary shares in lieu of cash as payment under this consulting agreement for the service period of October 1, 2022 through December 31, 2024, the monthly vesting of which is subject to Dr. Verdine's continued service under the consulting agreement.
- In April 2023, the Company engaged Shin Nippon Biomedical Laboratories Ltd. ("SNBL"), one of the Company's shareholders, to provide approximately $2.8 million in certain non-human primate contract research services to the Company and during the three months ended June 30, 2023, the Company paid SNBL $1.4 million for the aforementioned contract research services.

10. SUBSEQUENT EVENT

In May 2023, the Company announced its decision to discontinue clinical development of WVE-004 for C9orf72-associated ALS and FTD ("C9-ALS/FTD"). In July 2023, the joint steering committee that manages the Takeda Collaboration terminated C9-ALS/FTD as a target under the collaboration (the "C9 Target") and consequently Takeda and the Company's rights and obligations under the Takeda Collaboration were terminated with respect to the C9 Target.

As a result of the termination, the Company will recognize $28.0 million in revenue during the three months ended September 30, 2023, this represents the remainder of the deferred revenue for the C9 Target as of June 30, 2023.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q and in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission ("SEC") on March 23, 2023, as amended (the "2022 Annual Report on Form 10-K"). Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report on Form 10-Q, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Quarterly Report on Form 10-Q and the "Risk Factor" section of our 2022 Annual Report on Form 10-K, our actual results could differ materially from the results described in, or implied by, these forward-looking statements.

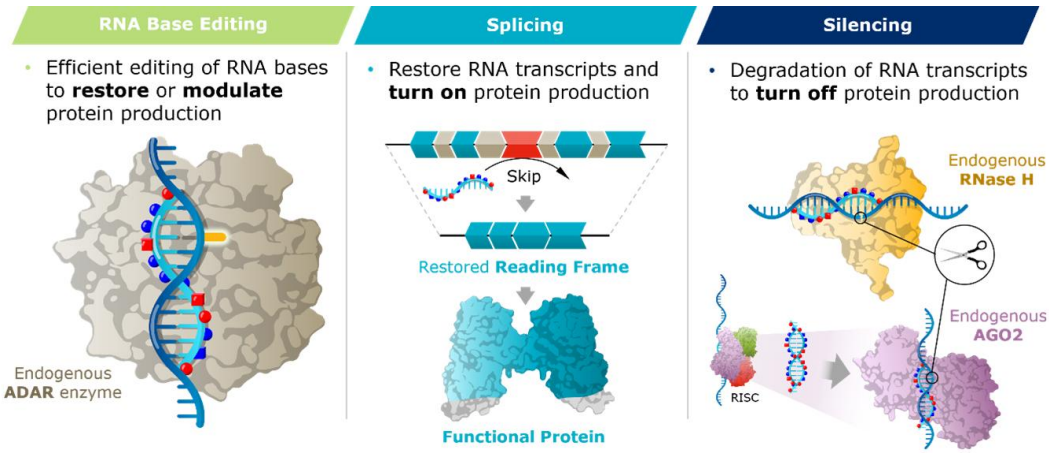
Overview

We are a clinical-stage RNA medicines company committed to delivering life-changing treatments for people battling devastating diseases. Using PRISM, our proprietary discovery and drug development platform that enables the precise design, optimization, and production of novel stereopure oligonucleotides, we are working to develop first- or best-in-class medicines that target the transcriptome (the full set of ribonucleic acid ("RNA") molecules produced from the human genome) to treat genetically defined diseases with a high degree of unmet need.

Our RNA-targeting oligonucleotides are designed to correct disease-causing mutations, modulate protein activity, restore the production of functional proteins or reduce the expression of disease-promoting RNAs or proteins. Data from our ongoing clinical and preclinical studies has demonstrated significant improvements in potency, durability, and distribution for our oligonucleotides designed through PRISM, compared with competitor chemistries. These data support our platform as best-in-class for designing and optimizing RNA-targeting medicines.

Since our inception, we have seen the value of developing RNA-targeting medicines compared to other nucleic acid therapeutics, including gene therapy and DNA editing. By intervening at the RNA level, we have the potential to address diseases that have historically been difficult to treat with small molecules or biologics, while retaining the ability to titrate dose, modulate duration of effect, and avoid risk of permanent off-target genetic changes and other challenges associated with DNA editing or gene therapy approaches. Oligonucleotides have additional advantages as a therapeutic class, including the ability to access multiple tissue types and the ability to modulate the frequency of dosing to ensure broad distribution within tissues over time. Oligonucleotides also have well-established manufacturing processes and validated test methods based on decades of improvements, as well as established regulatory, access, and reimbursement pathways.

Our approach is based on the scientific insight that the biological machinery necessary to address genetic diseases already exists in human cells and can be harnessed for therapeutic purposes with the right tools. We have built a versatile platform comprised of multiple therapeutic modalities, which provides flexibility to design built-for-purpose molecules that optimally address disease biology. These modalities are RNA base editing, splicing, and silencing, including both RNA interference ("RNAi") and antisense, all of which incorporate proprietary and novel chemistries to optimize the pharmacological properties of our therapeutic oligonucleotides.



We have a robust and diverse pipeline of potential first- or best-in-class programs. Our lead programs are designed to treat genetic diseases, including those in muscle, including Duchenne muscular dystrophy ("DMD"); liver, including alpha-1 antitrypsin deficiency ("AATD"); and the central nervous system ("CNS"), including Huntington's disease ("HD"). These programs include:

- WVE-N531 (splicing), our exon 53 molecule for the treatment of DMD;
- WVE-006 (editing), our SERPINA1 molecule for the treatment of AATD; and
- WVE-003 (silencing), our mHTT SNP3 molecule for the treatment of HD.

Over the last several years, we have built a leading RNA base editing capability. Our A-to-I RNA base editing oligonucleotides ("AIMers") enable access to areas of disease biology that are not viable for other therapeutic modalities. Our editing capability affords us the dexterity to address both rare diseases, as well as diseases impacting large patient populations.

AIMers are designed to target single bases on an RNA transcript and recruit proteins that exist in the body, called ADAR (adenosine deaminases acting on RNA) enzymes, which naturally possess the ability to change an adenine (A) to an inosine (I), which cells read as guanine (G). This approach enables both the correction of G-to-A point mutations, as well as the modulation of RNA to upregulate protein expression, modify protein-protein interactions, or alter RNA folding and processing. AIMers enable simplified delivery and avoid the risk of permanent changes to the genome and irreversible off-target effects with DNA-targeting approaches. AIMers are short in length, fully chemically modified, and use novel chemistry, including proprietary PN backbone modifications and chiral control, which make them distinct from other ADAR-mediated editing approaches.

Our PRISM platform was built on the recognition that a significant opportunity exists to tune the pharmacological properties of oligonucleotide therapeutics by leveraging three key features of these molecules: sequence, chemistry, and stereochemistry. Our unique ability to control stereochemistry provides the resolution necessary to optimize pharmacological profiles and develop and manufacture stereopure oligonucleotides. Stereopure oligonucleotides are comprised of molecules with atoms precisely and purposefully arranged in three-dimensional orientations at each linkage. These differ from the mixture-based oligonucleotides currently on the market or in development by others. Additionally, to mitigate pharmacological risks and potential manufacturing challenges, our approach focuses on designing short, chemically modified oligonucleotides without the need for complex delivery vehicles. We have also established and continue to enhance our internal current good manufacturing practices ("cGMP") manufacturing capabilities to increase control and visibility of our drug substance supply chain, while continuing to innovate oligonucleotide manufacturing.

PRISM also incorporates our novel, proprietary PN backbone chemistry modifications, which have been shown preclinically and clinically to increase potency, distribution, and durability of effect across our various modalities. PN chemistry is incorporated in all of our current clinical, preclinical and discovery-stage programs.

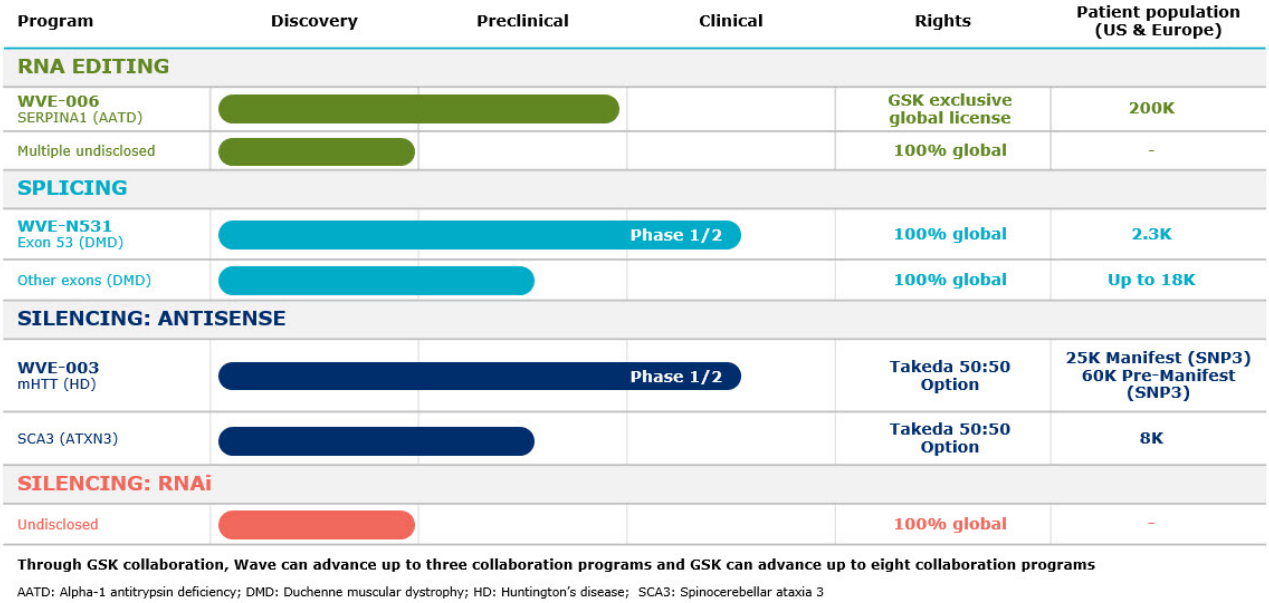
In December 2022, we announced a strategic collaboration with GlaxoSmithKline Intellectual Property (No. 3) ("GSK") to advance transformative oligonucleotide therapeutics, including WVE-006. The collaboration combines GSK's unique insights in human genetics, as well as its global development and commercial capabilities, with our PRISM platform and oligonucleotide expertise. The collaboration will enable us to continue building a pipeline of first-in-class oligonucleotide-based therapeutics and unlock new areas of disease biology, as well as realize the full value of WVE-006 as a potential best-in-class treatment for AATD that has the potential to simultaneously address both liver and lung manifestations of the disease.

The GSK collaboration has three components:

(1) A discovery collaboration which enables us to advance up to three programs leveraging targets informed by GSK's novel insights;
(2) A discovery collaboration which enables GSK to advance up to eight programs leveraging PRISM and our oligonucleotide expertise and discovery capabilities; and
(3) An exclusive global license for GSK to WVE-006, our preclinical program for AATD that uses our proprietary AIMer technology. We will maintain development responsibilities for WVE-006 through completion of the first clinical study, at which point development and commercial responsibilities will transition to GSK.

On May 23, 2023, we announced topline results from the Phase 1b/2a FOCUS-C9 study and our decision to discontinue clinical development of WVE-004 for C9orf72-associated amyotrophic lateral sclerosis ("ALS") and frontotemporal dementia ("FTD") ("C9-ALS/FTD"). Results from the study indicated that WVE-004 was generally safe and well-tolerated across doses of WVE-004, with most adverse events presenting as mild in intensity. Importantly, robust, sustained reductions in poly(GP) dipeptide proteins from baseline were observed in the cerebrospinal fluid ("CSF"), with a maximal mean reduction of 48% ($p<0.0001$) in the Q12W dose and 50% ($p=0.0001$) in the Q4W dose of WVE-004, successfully translating preclinical model pharmacodynamic effects to clinical biomarker effects. However, no trends in clinical benefit were observed at 24 weeks, and reductions in poly(GP) were not correlated with stabilization or improvement in functional outcomes. Based on these data, and in the absence of biomarkers reasonably likely to predict clinical outcomes, we discontinued development of WVE-004. In July 2023, the joint steering committee that manages the Takeda Collaboration (as defined in Note 5 in the notes to the unaudited consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q, "Note 5") terminated C9-ALS/FTD as a target under the collaboration (the "C9 Target") and consequently Takeda and Wave's rights and obligations under the Takeda Collaboration were terminated with respect to the C9 Target.

Our Current Programs



Additional details regarding our lead therapeutic programs are set forth below.

Duchenne muscular dystrophy ("DMD")

In DMD, we are advancing WVE-N531, which is designed to skip exon 53 within the dystrophin gene – a therapeutic approach that would address approximately 8-10% of DMD cases. WVE-N531 is designed to cause the cellular splicing machinery to skip over this exon during pre-mRNA processing, which restores the dystrophin mRNA reading frame and enables production of truncated, but functional, dystrophin protein. Exon skipping produces dystrophin from the endogenous dystrophin gene (not micro or mini dystrophin expressed from a vector), under the control of native gene-regulatory elements, resulting in normal expression. WVE-N531 is both our first splicing candidate and our first systemically administered candidate incorporating PN chemistry to be assessed in the clinic.

In December 2022 (data cut-off: December 6, 2022), we announced a positive update from Part A of the Phase 1b/2a proof-of-concept study of WVE-N531 in three boys with DMD amenable to exon 53 skipping. High muscle concentrations of WVE-N531 and exon skipping were observed six weeks after initiating biweekly multi-dosing at 10 mg/kg, achieving proof-of-concept in the study. WVE-N531 also appeared safe and well-tolerated.

To evaluate dystrophin protein restoration, we are initiating the Phase 2 portion of the WVE-N531 open-label study ("Part B"), and plan to enroll up to ten boys. Boys will be dosed at 10 mg/kg biweekly, and we plan to assess dystrophin protein after 24 and 48 weeks of dosing. The primary endpoint will be dystrophin protein levels, and the study will also evaluate pharmacokinetics, functional

endpoints and safety and tolerability. We expect to initiate dosing in 2023 and to deliver data in 2024. Based on results from this study, we would consider advancing a broader DMD pipeline with PN-modified splicing oligonucleotides for skipping other exons, with the goal of providing new treatment options for a larger population of boys with DMD.

Alpha-1 antitrypsin deficiency ("AATD")

Our AATD program is the first to leverage our novel RNA editing capability and uses clinically proven *N*-acetylgalactosamine ("GalNAc")-conjugated AIMers with subcutaneous dosing. By correcting the single RNA base mutation that causes a majority of AATD cases with the Pi*ZZ phenotype (approximately 200,000 in the United States and Europe), RNA editing may provide an ideal approach for increasing circulating levels of wild-type Alpha-1 antitrypsin ("AAT") protein and reducing mutant protein aggregation in the liver, thus simultaneously addressing both the lung and liver manifestations of the disease.

In the third quarter of 2022, we announced WVE-006 as our development candidate for AATD. WVE-006 is first-in-class in AATD and is the most advanced program currently in development using an oligonucleotide to harness an endogenous enzyme for RNA editing. IND-enabling studies are complete, and we expect to submit clinical trial applications (CTAs) in the second half of 2023. Additionally, under the GSK collaboration, GSK received the exclusive global license for WVE-006, with clinical development and commercial responsibilities transitioning to GSK after we complete the first clinical trial. Under the terms of the collaboration, we are eligible to receive up to $525 million in development, launch and sales-related milestones, as well as double-digit tiered royalties as a percentage of net sales up to the high teens, for WVE-006.

Preclinical data show that treatment with WVE-006 resulted in approximately 50% RNA editing of SERPINA1 transcript and approximately 7-fold greater AAT protein levels (well above the predicted protective threshold of 11uM) at 13 weeks in an established AATD mouse model (NSG-PiZ). WVE-006 also led to restoration of approximately 50% wild-type M-AAT protein in serum and a 3-fold increase in neutrophil elastase inhibition activity, indicating that the restored M-AAT protein was functional. Wave's AATD AIMers are highly specific to SERPINA1 RNA *in vitro* and *in vivo* based on transcriptome-wide analyses.

If we are successful in the clinic with WVE-006, we will both validate our clinical approach to AATD, as well as validate the feasibility of RNA editing in humans.

Huntington's disease ("HD")

In HD, we are currently advancing WVE-003, a stereopure antisense oligonucleotide designed to selectively target an undisclosed single nucleotide polymorphism ("SNP"), "mHTT SNP3", associated with the disease-causing mutant huntingtin ("mHTT") mRNA transcript within the *Huntingtin ("HTT")* gene. Approximately 40% of the HD population carries SNP3 according to published literature (Carroll et al., Molecular Therapy, 2011).

WVE-003 incorporates our novel PN chemistry, as well as learnings from our first-generation HD programs. Targeting mRNA with SNP3 allows us to lower expression of transcript from the mutant allele, while leaving the healthy transcript relatively intact, thereby preserving wild-type (healthy) huntingtin ("wtHTT") protein, which is important for neuronal function. Our allele-selective approach may also enable us to address the pre-manifest, or asymptomatic, HD patient population in the future. In preclinical studies, WVE-003 showed dose-dependent and selective reduction of mHTT mRNA *in vitro*, as well as potent and durable knockdown of mHTT mRNA and protein *in vivo* in mouse models.

The SELECT-HD trial is a multicenter, randomized, double-blind, placebo-controlled Phase 1b/2a clinical trial to assess the safety and tolerability of intrathecally administered WVE-003 for patients with early manifest HD. Additional objectives include measurement of mHTT and wtHTT protein and exploratory pharmacokinetic, pharmacodynamic, clinical and magnetic resonance imaging ("MRI") endpoints. The SELECT-HD trial is designed to be adaptive, with dose level and dosing frequency being guided by an independent committee.

In September 2022 (data cut-off: August 29, 2022), we announced a positive update from SELECT-HD driven by the observation of reductions in mHTT protein in cerebrospinal fluid ("CSF") after study participants received either a single 30 or 60 mg dose of WVE-003. Additionally, wtHTT protein levels appeared consistent with allele-selectivity. Single doses (30 mg, 60 mg, and 90 mg) of WVE-003 appeared generally safe and well-tolerated. Based on the SELECT-HD data, we adapted the trial to expand the single-dose cohorts, the multi-dose portion is underway, and we expect to share additional single-dose, as well as available multi-dose, biomarker and safety data in the second half of 2023. As previously disclosed, Wave's mHTT assay vendor experienced a cyber-attack in April 2023. No Wave data or patient samples were impacted by the attack and Wave remains in close contact with the vendor as they address this issue.

Discovery Pipeline

We are advancing new targets across multiple disease areas, in light of compelling preclinical data indicating our oligonucleotides can distribute to various tissues and cells without complex delivery vehicles. We are also focusing on targets that have been genetically

validated and offer biomarkers for target engagement to enable early proof-of-concept in the clinic. We expect this research to result in multiple new programs with first-in-class potential being added to our pipeline over the next several years.

In April 2023, we announced the publication of preclinical data for our novel siRNA formats in the journal of Nucleic Acids Research. The preclinical data demonstrated unprecedented Ago2 loading following administration of single subcutaneous GalNAc-siRNA dose, leading to improved potency and durability *in vivo* versus comparator siRNA formats.

We have also demonstrated the potential of our siRNA to silence targets in extra-hepatic tissues. In the first quarter of 2023, we announced data from our first *in vivo* siRNA study in the central nervous system (CNS), where our unconjugated siRNA constructs demonstrated 70-90% APP silencing across six brain regions in mouse CNS at eight weeks, following a single intracerebroventricular (ICV) dose.

Through our collaboration with GSK, we are gaining access to proprietary genetic insights to expand our wholly-owned pipeline. In addition, we and GSK are actively working on multiple target validation programs for our GSK-partnered programs, for which all of our costs and expenses are prepaid by GSK.

Financial Operations Overview

We have never been profitable, and since our inception, we have incurred significant operating losses. Our net loss for the three months ended June 30, 2023 and 2022 was $21.1 million and $41.3 million, respectively. Our net loss for the six months ended June 30, 2023 and 2022 was $48.5 million and $79.1 million, respectively. As of June 30, 2023 and December 31, 2022, we had an accumulated deficit of $1,015.8 million and $967.3 million, respectively. We expect to continue to incur significant expenses and operating losses for the foreseeable future.

Revenue

We recognize collaboration revenue under the GSK Collaboration Agreement, which became effective in January 2023 (as defined in Note 5), and the Takeda Collaboration Agreement (as defined in Note 5), which became effective in April 2018. We have not generated any product revenue since our inception and do not expect to generate any revenue from the sale of products for the foreseeable future.

Operating Expenses

Our operating expenses since inception have consisted primarily of research and development expenses and general and administrative expenses.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our discovery efforts, and the development of our product candidates, which include:

- compensation-related expenses, including employee salaries, bonuses, share-based compensation expense and other related benefits expenses for personnel in our research and development organization;
- expenses incurred under agreements with third parties, including contract research organizations (“CROs”) that conduct research, preclinical and clinical activities on our behalf, as well as contract manufacturing organizations (“CMOs”) that manufacture drug product for use in our preclinical studies and clinical trials;
- expenses incurred related to our internal manufacturing of drug substance for use in our preclinical studies and clinical trials;
- expenses related to compliance with regulatory requirements;
- expenses related to third-party consultants;
- research and development supplies and services expenses; and
- facility-related expenses, including rent, maintenance and other general operating expenses.

We recognize research and development costs as incurred. We recognize external development costs 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 individual agreements, which may differ from the pattern of costs incurred, and are reflected in our financial statements as prepaid or accrued expenses.

Our primary research and development focus since inception has been the development of our proprietary discovery and drug development platform, PRISM. We are using PRISM, which includes our novel PN backbone chemistry modifications, to design,

develop and commercialize a broad pipeline of nucleic acid therapeutic candidates that target RNA using RNA editing, splicing, and silencing.

Our research and development expenses consist primarily of expenses related to our CROs, CMOs, consultants, other external vendors and fees paid to global regulatory agencies to conduct our clinical trials, in addition to compensation-related expenses, internal manufacturing expenses, facility-related expenses and other general operating expenses. These expenses are incurred in connection with research and development efforts and our preclinical studies and clinical trials. We track certain external expenses on a program-by-program basis. However, we do not allocate compensation-related expenses, internal manufacturing expenses, equipment repairs and maintenance expense, facility-related expenses or other operating expenses to specific programs. These expenses, which are not allocated on a program-by-program basis, are included in the "PRISM and other research and development expenses" category along with other external expenses related to our discovery and development programs, as well as platform development and identification of potential drug discovery candidates.

Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect to continue to incur significant research and development expenses in the foreseeable future as we continue to manage our existing clinical trials, initiate additional clinical trials for certain product candidates, pursue later stages of clinical development for certain product candidates, maintain our manufacturing capabilities and continue to discover and develop additional product candidates in multiple therapeutic areas.

General and Administrative Expenses

General and administrative expenses consist primarily of compensation-related expenses, including salaries, bonuses, share-based compensation and other related benefits costs for personnel in our executive, finance, corporate, legal and administrative functions, as well as compensation-related expenses for our board of directors. General and administrative expenses also include legal fees; expenses associated with being a public company; professional fees for accounting, auditing, tax and consulting services; insurance costs; travel expenses; other operating costs; and facility-related expenses.

Other Income, Net

Other income, net is comprised primarily of dividend income and refundable tax credits from tax authorities. We recognize refundable tax credits when there is reasonable assurance that we will comply with the requirements of the refundable tax credit and that the refundable tax credit will be received.

Income Taxes

We are a Singapore multi-national company subject to taxation in the United States and various other jurisdictions.

Critical Accounting Policies and Significant Judgments and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States of America. The preparation of our financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amount of assets, liabilities, revenue, costs and expenses and related disclosures. Management considers many factors in selecting appropriate financial accounting policies and in developing the estimates and assumptions that are used in the preparation of the financial statements. Management must apply significant judgment in this process. We believe that our revenue recognition policy, particularly (a) assessing the number of performance obligations; (b) determining the transaction price; (c) allocating the transaction price to the performance obligations in the contract; and (d) determining the pattern over which performance obligations are satisfied, including estimates to complete performance obligations, and the assumptions and estimates used in our analysis of contracts with CROs and CMOs to estimate the contract expense, involve a greater degree of judgment, and therefore we consider them to be our critical accounting policies. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions.

Results of Operations

Comparison of the three months ended June 30, 2023 and 2022

	Three Months Ended June 30,		
	2023	2022	Change
		(in thousands)	
Revenue	$ 22,106	$ 375	$ 21,731
Operating expenses:			
Research and development	33,314	29,733	3,581
General and administrative	12,265	12,806	(541)
Total operating expenses	45,579	42,539	3,040
Loss from operations	(23,473)	(42,164)	18,691
Total other income, net	2,369	868	1,501
Loss before income taxes	(21,104)	(41,296)	20,192
Income tax provision	—	—	—
Net loss	$ (21,104)	$ (41,296)	$ 20,192

Revenue

Revenue for the three months ended June 30, 2023 was $22.1 million and was earned under the GSK Collaboration Agreement and the Takeda Collaboration Agreement. Revenue for the three months ended June 30, 2022 was $0.4 million and was earned primarily under the Takeda Collaboration Agreement, as the GSK Collaboration Agreement became effective in January 2023. The year-over-year increase is primarily driven by the revenue earned under the GSK Collaboration Agreement.

Research and Development Expenses

	Three Months Ended June 30,		
	2023	2022	Change
		(in thousands)	
ALS and FTD program	$ 3,334	$ 3,348	$ (14)
HD programs	4,095	1,253	2,842
DMD programs	2,255	392	1,863
AATD program	2,156	1,541	615
PRISM and other research and development expenses (1)	21,474	23,199	(1,725)
Total research and development expenses	$ 33,314	$ 29,733	$ 3,581

(1) Includes expenses related to discovery and development programs, identification of potential drug discovery candidates, compensation, internal manufacturing, equipment repairs and maintenance, facilities and other operating expenses, which are not allocated to specific programs.

Research and development expenses were $33.3 million for the three months ended June 30, 2023, compared to $29.7 million for the three months ended June 30, 2022. The increase of $3.6 million was due to the following:

- a less than $0.1 million decrease in external expenses related to our ALS and FTD program, WVE-004 (PN-modified silencing oligonucleotide), which we discontinued in May 2023;
- an increase of $2.8 million in external expenses related to our HD programs, including our WVE-003 (PN-modified silencing oligonucleotide) program;
- an increase of $1.9 million in external expenses related to our DMD programs, including WVE-N531 (PN-modified splicing oligonucleotide);
- an increase of $0.6 million in external expenses related to our AATD program, WVE-006 (PN-modified RNA editing oligonucleotide); and
- a decrease of $1.7 million in internal and external research and development expenses that are not allocated on a program-by-program basis and are related to other discovery and development programs, including PRISM and the identification of potential drug discovery candidates, mainly due to decreases in external research and development expenses and compensation-related expenses, partially offset by increases in facilities-related expenses.

General and Administrative Expenses

General and administrative expenses were $12.3 million for the three months ended June 30, 2023, as compared to $12.8 million for the three months ended June 30, 2022. The decrease is primarily driven by decreases in compensation-related expenses, partially offset by increases in other external general and administrative expenses and facilities-related expenses.

Other Income, Net

Other income, net for the three months ended June 30, 2023 and 2022 was $2.4 million and $0.9 million, respectively, and consisted of dividend income and estimated refundable tax credits. The increase in other income year-over-year was driven by an increase in dividend income.

Income Tax Provision

During the three months ended June 30, 2023 and 2022, we recorded no income tax provision. We maintained a full valuation allowance for the three months ended June 30, 2023 and 2022 in all jurisdictions due to uncertainty regarding future taxable income.

Comparison of the six months ended June 30, 2023 and 2022

	Six Months Ended June 30,		
	2023	2022	Change
		(in thousands)	
Revenue	$ 35,035	$ 2,125	$ 32,910
Operating expenses:			
Research and development	64,293	57,203	7,090
General and administrative	24,500	25,180	(680)
Total operating expenses	88,793	82,383	6,410
Loss from operations	(53,758)	(80,258)	26,500
Total other income, net	5,249	1,148	4,101
Loss before income taxes	(48,509)	(79,110)	30,601
Income tax provision	—	—	—
Net loss	$ (48,509)	$ (79,110)	$ 30,601

Revenue

Revenue for six months ended June 30, 2023 was $35.0 million and was earned under the GSK Collaboration Agreement and the Takeda Collaboration Agreement. Revenue for six months ended June 30, 2022 was $2.1 million and was primarily earned under the Takeda Collaboration Agreement, as the GSK Collaboration Agreement became effective in January 2023. The year-over-year increase is primarily driven by the revenue earned under the GSK Collaboration Agreement.

Research and Development Expenses

	Six Months Ended June 30,		
	2023	2022	Change
		(in thousands)	
ALS and FTD program	$ 6,051	$ 5,087	$ 964
HD programs	7,417	3,446	3,971
DMD programs	2,569	817	1,752
AATD program	3,724	1,852	1,872
PRISM and other research and development expenses (1)	44,532	46,001	(1,469)
Total research and development expenses	$ 64,293	$ 57,203	$ 7,090

(1) Includes expenses related to discovery and development programs, identification of potential drug discovery candidates, compensation, internal manufacturing, equipment repairs and maintenance, facilities and other operating expenses, which are not allocated to specific programs.

Research and development expenses were $64.3 million for the six months ended June 30, 2023, compared to $57.2 million for the six months ended June 30, 2022. The increase of $7.1 million was due to the following:

- an increase of $1.0 million in external expenses related to our ALS and FTD program, WVE-004 (PN-modified silencing oligonucleotide), which we discontinued in May 2023;
- an increase of $4.0 million in external expenses related to our HD programs, driven by decreased external expenses related to our discontinued WVE-120101 and WVE-120102 programs, partially offset by continuing external expenses for our WVE-003 (PN-modified silencing oligonucleotide) program;
- an increase of $1.8 million in external expenses related to our DMD programs, including WVE-N531 (PN-modified splicing oligonucleotide);
- an increase of $1.9 million in external expenses related to our AATD program, WVE-006 (PN-modified RNA editing oligonucleotide); and
- a decrease of $1.5 million in internal and external research and development expenses that are not allocated on a program-by-program basis and are related to other discovery and development programs, including PRISM and the identification of potential drug discovery candidates, primarily due to decreases in external research and development expenses and depreciation expenses, partially offset by increased compensation-related expenses and facilities related expenses.

General and Administrative Expenses

General and administrative expenses were $24.5 million for the six months ended June 30, 2023, as compared to approximately $25.2 million for the six months ended June 30, 2022. The decrease of $0.7 million was primarily due to decreases in compensation-related expenses, partially offset by increased external general and administrative expenses and facilities related expenses.

Other Income (Expense), Net

Other income, net for the six months ended June 30, 2023 was $5.2 million and consisted primarily of dividend income, as well as estimated refundable tax credits. Other income, net for the six months ended June 30, 2022 was $1.1 million and primarily related to estimated refundable tax credits. The increase year-over-year was driven by the increase in dividend income.

Income Tax Provision

During the six months ended June 30, 2023 and 2022, we recorded no income tax provision. We maintained a full valuation allowance for the six months ended June 30, 2023 and 2022 in all jurisdictions due to uncertainty regarding future taxable income.

Liquidity and Capital Resources

Since our inception, we have not generated any product revenue and have incurred recurring net losses. To date, we have primarily funded our operations through public and other registered offerings of our ordinary shares, collaborations with third parties and private placements of debt and equity securities. Through June 30, 2023, we have received an aggregate of approximately $1,192.9 million in net proceeds from these transactions, consisting of $632.6 million in net proceeds from public and other registered offerings of our ordinary shares, $471.0 million from our collaborations and $89.3 million in net proceeds from private placements of our debt and equity securities.

As of June 30, 2023, we had cash and cash equivalents totaling $173.0 million, restricted cash of $3.7 million and an accumulated deficit of $1,015.8 million.

We expect that our existing cash and cash equivalents will be sufficient to fund our operations for at least the next twelve months. We have based this expectation on assumptions that may prove to be incorrect, and we may use our available capital resources sooner than we currently expect. In addition, we may elect to raise additional funds before we need them if the conditions for raising capital are favorable due to market conditions or strategic considerations, even if we expect we have sufficient funds for our current or future operating plans.

Our operating lease commitments as of June 30, 2023 total approximately $42.2 million, of which $3.8 million is related to payments in 2023 and $38.4 million is related to payments beyond 2023.

Until we can generate significant revenue from product sales, if ever, we expect to continue to finance our operations through a combination of public or private equity or debt financings or other sources, which may include collaborations with third parties. In May 2019, we filed a shelf registration statement on Form S-3ASR with the SEC pursuant to which we registered for sale an indeterminate amount of any combination of our ordinary shares, debt securities, warrants, rights and/or units from time to time and at prices and on terms that we may determine. Our shelf registration statement on Form S-3ASR also included a prospectus covering up to an aggregate of $250.0 million in ordinary shares that we may issue and sell from time to time, through Jefferies LLC (“Jefferies”) acting as our sales agent, pursuant to the open market sales agreement that we entered into with Jefferies in May 2019, as amended in March 2020 and March 2022 (as amended, the “Sales Agreement”), for our “at-the-market” equity program. Since we no longer qualified as a “well-known seasoned issuer” at the time of the filing of our Annual Report on Form 10-K for the year ended December 31, 2019, we previously amended the shelf registration statement to register for sale up to $500.0 million of any combination of our ordinary shares, debt securities, warrants, rights and/or units from time to time and at prices and on terms that we may determine, including the $250.0 million in ordinary shares that we may issue and sell from time to time pursuant to our “at-the-market” equity program. This registration statement, which we refer to as the “2019 Form S-3,” remained effective until our 2022 Form S-3 (as defined below) was declared effective on May 4, 2022, after which time we may no longer offer or sell any securities under the 2019 Form S-3. During the three months ended June 30, 2023, we sold 429,051 ordinary shares under our at-the-market equity program for aggregate gross proceeds of $1.9 million.

On March 3, 2022, we filed a new universal shelf registration on Form S-3 with the SEC, which was declared effective by the SEC on May 4, 2022, pursuant to which we registered for sale up to $500.0 million of any combination of our ordinary shares, debt securities, warrants, rights and/or units from time to time and at prices and on terms that we may determine, which we refer to as the “2022 Form S-3.” The 2022 Form S-3 includes a prospectus covering up to approximately $132.0 million in ordinary shares that had not yet been issued or sold under our Sales Agreement with Jefferies. As of June 30, 2023, we have $428.1 million in securities available for issuance under the 2022 Form S-3, including approximately $130.1 million in ordinary shares available for issuance under our at-the-market equity program.

Adequate additional financing may not be available to us on acceptable terms, or at all. Our inability to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy. We will need to generate significant revenue to achieve profitability, and we may never do so.

Cash Flows

The following table summarizes our cash flow activity:

	Six Months Ended June 30,	
	2023	2022
	(in thousands)	
Net cash provided by (used in) operating activities	$ 48,265	$ (68,695)
Net cash used in investing activities	(561)	(25,594)
Net cash provided by financing activities	36,902	67,116
Effect of foreign exchange rates on cash, cash equivalents and restricted cash	(121)	(228)
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 84,485	$ (27,401)

Operating Activities

During the six months ended June 30, 2023, operating activities provided $48.3 million of cash, due to our net loss of $48.5 million, offset by non-cash charges of $9.9 million and changes in operating assets and liabilities of $86.9 million. The largest change in operating assets and liabilities was a $104.3 million increase in deferred revenue, mainly driven by our GSK Collaboration Agreement, which became effective in January 2023.

During the six months ended June 30, 2022, operating activities used $68.7 million of cash, primarily due to our net loss of $79.1 million, offset by $10.9 million of share-based compensation expense.

Investing Activities

During the six months ended June 30, 2023, investing activities used $0.6 million of cash, related to purchases of property and equipment.

During the six months ended June 30, 2022, investing activities used $25.6 million of cash, of which $50.0 million related to purchases of short-term investments, $25.0 million of which was subsequently sold, and $0.6 million related to purchases and sales of property and equipment.

Financing Activities

During the six months ended June 30, 2023, net cash provided by financing activities was $36.9 million, which was primarily due to the GSK Equity Investment (as defined in Note 5).

During the six months ended June 30, 2022, net cash provided by financing activities was $67.1 million, which was primarily due to the net proceeds from our previously disclosed June 2022 underwritten offering, which was comprised of sales of ordinary shares and Pre-Funded Warrants.

Funding Requirements

We expect to continue to incur significant expenses in connection with our ongoing research and development activities and our internal cGMP manufacturing activities. Furthermore, we anticipate that our expenses will continue to vary if and as we:

- continue to conduct our clinical trials evaluating our product candidates in patients;
- conduct research and preclinical development of discovery targets and advance additional programs into clinical development;
- file clinical trial applications with global regulatory agencies and conduct clinical trials for our programs;
- make strategic investments in continuing to innovate our research and development platform, PRISM, and in optimizing our manufacturing processes and formulations;
- maintain our manufacturing capabilities through our internal facility and our CMOs;
- maintain our intellectual property portfolio and consider the acquisition of complementary intellectual property;
- seek and obtain regulatory approvals for our product candidates;
- respond to the impacts of the COVID-19 global pandemic, the conflict involving Russia and Ukraine, global economic uncertainty, rising inflation, rising interest rates or market disruptions on our business; and
- establish and build capabilities to market, distribute and sell our product candidates.

We may experience delays or encounter issues with any of the above, including but not limited to failed studies, complex results, safety issues or other regulatory challenges.

Because of the numerous risks and uncertainties associated with the development of drug candidates and because the extent to which we may enter into collaborations with third parties for development of product candidates is unknown, we are unable to estimate the amounts of future capital outlays and operating expenses associated with completing the research and development for our therapeutic programs. Our future capital requirements for our therapeutic programs will depend on many factors, including:

- the progress, results and costs of conducting research and continued preclinical and clinical development for our therapeutic programs and future potential pipeline candidates;
- the number and characteristics of product candidates and programs that we pursue;
- the cost of manufacturing clinical supplies of our product candidates;
- whether and to what extent milestone events are achieved under our collaborations with Takeda and GSK or any potential future licensee or collaborator;
- the costs, timing and outcome of regulatory review of our product candidates;
- our ability to obtain marketing approval for our product candidates;
- the impacts of the COVID-19 global pandemic, the conflict involving Russia and Ukraine, global economic uncertainty, rising inflation, rising interest rates or market disruptions on our business;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- market acceptance of our product candidates, to the extent any are approved for commercial sale, and the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in businesses, products and technologies, including entering into licensing or collaboration arrangements for product candidates.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our product revenue, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if ever. Accordingly, we will need to obtain substantial additional funds to achieve our business objectives.

Adequate additional funds may not be available to us on acceptable terms when we need them, or at all. We do not currently have any committed external source of funds, except for possible future payments from Takeda or GSK under our collaborations with them. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our existing shareholders will be diluted, and the terms may include liquidation or other preferences that adversely affect the rights of our shareholders. Additional debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends and may require the issuance of warrants, which could potentially dilute our shareholders' ownership interests.

If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development programs or any future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign exchange rates, as well as, to a lesser extent, inflation and capital market risk.

Interest Rate Risk

We are exposed to interest rate risk in the ordinary course of our business. Our cash and cash equivalents are comprised of funds held in checking accounts and money market accounts.

Foreign Currency Risk

Due to our operations outside of the United States, we are exposed to market risk related to changes in foreign currency exchange rates. Historically, we have not hedged our foreign currency exposure. Changes in the relative values of currencies occur regularly and, in some instances, could materially adversely affect our business, our financial conditions, our results of operations or our cash flows. For the three and six months ended June 30, 2023 and 2022, changes in foreign currency exchange rates did not have a material impact on our historical financial position, our business, our financial condition, our results of operations or our cash flows.

Inflation Risk

We do not believe that inflation had a material effect on our business, financial condition, results of operations or cash flows in the last two years. If global inflation trends continue, we expect appreciable increases in clinical trial, labor, and other operating costs.

Capital Market Risk

We currently have no product revenues and depend on funds raised through other sources. One possible source of funding is through further equity offerings. Our ability to raise funds in this manner depends upon capital market forces affecting our share price, including impacts of global economic uncertainty on the capital markets.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2023. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to its management, including its principal executive and principal financial officers, 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 their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 30, 2023, our principal executive officer and principal financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation of such internal control required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended June 30, 2023 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

We are not currently a party to any material legal proceedings.

Item 1A. Risk Factors

In addition to the other information set forth in this Quarterly Report on Form 10-Q, you should carefully consider the factors discussed under the caption "Risk Factors" that appear in Item 1A of our 2022 Annual Report on Form 10-K.

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

Recent Sales of Unregistered Equity Securities

None.

Issuer Purchases of Equity Securities

We did not repurchase any of our equity securities during the three months ended June 30, 2023.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number	Exhibit Description	Filed with this Report	Incorporated by Reference herein from Form or Schedule	Filing Date	SEC File/Reg. Number
4.1	Description of Securities of the Registrant and Comparison of Shareholder Rights	X			
31.1	Rule 13a-14(a)/15d-14(a) Certification of Principal Executive Officer	X			
31.2	Rule 13a-14(a)/15d-14(a) Certification of Principal Financial Officer	X			
32*	Section 1350 Certifications of Principal Executive Officer and Principal Financial Officer	X			
101.INS	Inline XBRL Instance Document – The instance document does not appear in the interactive data file because its Inline XBRL tags are embedded within the Inline XBRL document	X			
101.SCH	Inline XBRL Taxonomy Extension Schema Document	X			
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X			
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X			
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	X			
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X			
104	Cover Page Interactive Data File (formatted in Inline XBRL and contained in Exhibit 101)	X			

(*) The certifications attached as Exhibit 32 that accompany this Quarterly Report on Form 10-Q are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Wave Life Sciences Ltd. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of such Form 10-Q), irrespective of any general incorporation language contained in such filing.

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.

WAVE LIFE SCIENCES LTD.

Date: August 3, 2023

By: /s/ Paul B. Bolno, M.D., MBA

Paul B. Bolno, M.D., MBA
President and Chief Executive Officer
(Principal Executive Officer)

Date: August 3, 2023

By: /s/ Kyle Moran

Kyle Moran
Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)

DESCRIPTION OF SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

Wave Life Sciences Ltd. (the "Company," "we," "us" or "our") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): our ordinary shares, no par value.

DESCRIPTION OF SHARE CAPITAL

General

The following description of our share capital and provisions of our constitution (formerly known as our memorandum and articles of association) are summaries and are qualified by reference to the Companies Act 1967 of Singapore ("Singapore Companies Act") and our constitution. A copy of our constitution has been filed with the Securities and Exchange Commission as an exhibit to our most recent Annual Report on Form 10-K.

Ordinary Shares

As of July 27, 2023, our issued and paid-up ordinary share capital consists of 98,983,261 ordinary shares. We currently have only one class of issued ordinary shares, which have identical rights in all respects and rank equally with one another. Our ordinary shares have no par value and there is no authorized share capital under Singapore law. There is a provision in our constitution which provides that we may issue shares with such preferred, deferred or other special rights or such restrictions, whether in regard to dividend, voting, return of capital or otherwise as our board of directors may determine.

All of our shares presently issued are fully paid-up, and existing shareholders are not subject to any calls on these shares. Although Singapore law does not recognize the concept of "non-assessability" with respect to newly-issued shares, we note that any purchaser of our shares who has fully paid up all amounts due with respect to such shares will not be subject under Singapore law to any personal liability to contribute to the assets or liabilities of our company in such purchaser's capacity solely as a holder of such shares. We believe that this interpretation is substantively consistent with the concept of "non-assessability" under most, if not all, U.S. state corporations laws. All of our shares are in registered form. We cannot, except in the circumstances permitted by the Singapore Companies Act, grant any financial assistance for the acquisition or proposed acquisition of our own shares. Except as described below under "—Takeovers," there are no limitations imposed by the Singapore Companies Act or by our constitution on the right of shareholders not resident in Singapore to hold or vote ordinary shares.

Transfer Agent and Registrar

The transfer agent and registrar for our ordinary shares is Computershare Trust Company, N.A.

Nasdaq Global Market

Our ordinary shares are listed for quotation on The Nasdaq Global Market under the symbol "WVE."

New Shares

Under the Singapore Companies Act, new shares may be issued only with the prior approval of our shareholders in a general meeting. General approval may be sought from our shareholders in a general meeting for the issue of shares. Approval, if granted, will lapse at the earlier of:

- the conclusion of the next annual general meeting; or
- the expiration of the period within which the next annual general meeting is required by law to be held (i.e., within six months after the end of each financial year),

but any approval may be revoked or varied by the company in a general meeting.

Our shareholders have provided such general authority to issue new ordinary shares until the conclusion of our 2024 annual general meeting. Such approval will lapse in accordance with the preceding paragraph if our shareholders do not grant a new approval at our 2024 annual general meeting. Subject to this and the provisions of the Singapore Companies Act and our constitution, our board of directors may allot and issue or grant options over or otherwise dispose of new ordinary shares to such persons on such terms and conditions and with the rights and restrictions as they may think fit to impose.

Preferred Shares

Series A Preferred Shares

As of June 30, 2023, we have 3,901,348 Series A preferred shares outstanding. These shares are currently held by one of our largest shareholders, Shin Nippon Biomedical Laboratories, Ltd. The terms of the Series A preferred shares as set out in our constitution include (1) no voting rights at any general meeting other than in limited circumstances, (2) a liquidation preference equal to $0.002 per Series A preferred share, (3) no entitlement to dividends and (4) the right to convert the Series A preferred shares at any time on a one-for-one basis into ordinary shares at the discretion of the holder in accordance with the constitution.

The holders of the Series A preferred shares are not entitled to vote at any general meeting. The only instances in which the holders of the Series A preferred shares are able to vote at a general meeting would be if (but only if) the matters to be discussed at the meeting relate to or there is intent to pass resolutions on (i) abrogating or changing the rights attached to the Series A preferred shares; and (ii) for the winding up of the Company. Such resolutions would require the unanimous approval of the holders of the Series A preferred shares.

Other Preferred Shares

Under the Singapore Companies Act, different classes of shares in a public company may be issued only if (a) the issue of the class or classes of shares is provided for in the constitution of the public company and (b) the constitution of the public company sets out in respect of each class of shares the rights attached to that class of shares. Our constitution provides that we may issue shares of a different class with preferred, deferred or other special rights, or such restrictions, whether in regard to dividend, voting, return of capital or otherwise as our board of directors may determine. Under Singapore law, our preferred shareholders will have the right to attend any general meeting and in a poll at such general meeting, to have at least one vote for every preferred share held:

- upon any resolution concerning the voluntary winding-up of our company under Section 160 of the Insolvency, Restructuring and Dissolution Act 2018;
- upon any resolution which varies the rights attached to such preferred shares; or
- in the case of preferred shares issued after August 15, 1984, but before the commencement of Section 96 of the Companies (Amendment) Act 2014, when the dividends to be paid on our preferred shares or any part thereof are more than twelve months in arrears and unpaid, for the period they remain in arrears and unpaid.

We may, subject to the Singapore Companies Act and the prior approval in a general meeting of our shareholders, issue preferred shares which are, or at our option or are to be, subject to redemption provided that such preferred shares may not be redeemed out of capital unless:

- all the directors have made a solvency statement in relation to such redemption; and
- we have lodged a copy of the statement with the Accounting and Corporate Regulatory Authority of Singapore.

Further, such shares must be fully paid-up before they are redeemed.

As of June 30, 2023, we have no preferred shares outstanding other than the Series A preferred shares described above. At present, we have no plans to issue additional preferred shares.

Pre-Funded Warrants

As of June 30, 2023, we have pre-funded warrants outstanding to purchase up to 7,093,656 ordinary shares. The pre-funded warrants are exercisable at any time after their original issuance and on or prior to 5:00 p.m. (New York City time) on the five year anniversary of the original issuance date, which was June 16, 2022. The pre-funded warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and by payment in full of the exercise price in immediately available funds for the number of ordinary shares purchased upon such exercise. As an alternative to payment in immediately available funds, the holder may elect to exercise the pre-funded warrant through a cashless exercise, in which the holder would receive upon such exercise the net number of ordinary shares determined according to the formula set forth in the pre-funded warrant. No fractional ordinary shares will be issued in connection with the exercise of a pre-funded warrant.

Exercise Limitations

Under the pre-funded warrants, unless and until the Shareholder Approval (as defined below) is obtained, we may not effect the exercise of any pre-funded warrant, and a holder will not be entitled to exercise any portion of any pre-funded warrant, which, upon giving effect to such exercise, would cause (i) the aggregate number of our ordinary shares beneficially owned by the holder (together with its affiliates) to exceed 19.99% of the number of our ordinary shares outstanding immediately after giving effect to the exercise, or (ii) the combined voting power of our securities beneficially owned by the holder (together with its affiliates) to exceed 19.99% of the combined voting power of all of our securities then outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants.

Upon the written request of the holder delivered to us and subsequent to December 31, 2022, we shall use commercially reasonable efforts to obtain shareholder approval (the "Shareholder Approval"), at our next regularly scheduled annual general meeting of shareholders, for the issuance of the pre-funded warrant shares upon the exercise of all or any portion of the pre-funded warrants such that such issuance of pre-funded warrant shares will comply with the Listing Rules of the Nasdaq Stock Market, including, without limitation, Listing Rule 5635, and with applicable Singapore law. In the event that the holder requests the Shareholder Approval, we use commercially reasonable efforts to obtain Shareholder Approval at our next regularly scheduled annual general meeting, and Shareholder Approval is not obtained at such meeting for any reason, then the holder may again request Shareholder Approval each year pursuant to and subject to the terms of the pre-funded warrants, at each of our subsequent regularly scheduled annual general meetings that occur prior to the termination date of the pre-funded warrants. We shall not be obligated to seek the Shareholder Approval at any shareholder meeting other than our regularly scheduled annual shareholder meeting and such written request of the holder must be received by us at least 90 days in advance of such annual meeting.

Exercise Price

The exercise price per whole share of our ordinary shares purchasable upon the exercise of the pre-funded warrants is $0.0001 per ordinary share. The exercise price of the pre-funded warrants and the number of our ordinary shares issuable upon exercise of the pre-funded warrants is subject to appropriate adjustment in the event of certain share dividends and distributions, share splits, share combinations, reclassifications or similar events affecting our ordinary shares.

Transferability

Subject to applicable laws, the pre-funded warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing

We do not plan on applying to list the pre-funded warrants on The Nasdaq Global Market, any other national securities exchange or any other nationally recognized trading system.

Fundamental Transactions

In the event of a fundamental transaction, as described in the pre-funded warrants and generally including any reorganization, recapitalization or reclassification of our ordinary shares, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding ordinary shares, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding ordinary shares, upon consummation of such a fundamental transaction, the holders of the pre-funded warrants will be entitled to receive upon exercise of the pre-funded warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction without regard to any limitations on exercise contained in the pre-funded warrants.

No Rights as a Shareholder

Except by virtue of such holder's ownership of our ordinary shares, the holder of a pre-funded warrant does not have the rights or privileges of a holder of our ordinary shares, including any voting rights, until the holder exercises the pre-funded warrant. In the event of certain distributions, including cash dividends, if any, to all holders of our ordinary shares for no consideration, the holder of a pre-funded warrant shall be entitled to participate in such distributions to the same extent as if a holder of our ordinary shares, subject to not exceeding the ownership limitations described above under "—Exercise Limitations," in which case such distribution shall be held in abeyance for the benefit of such holder until the earlier of such time as the ownership limitations would not be exceeded or the warrant is exercised.

Registration Rights under our Share Purchase Agreement with Pfizer

Under the terms of our Share Purchase Agreement dated as of May 5, 2016 with an affiliate of Pfizer Inc., or the Pfizer Affiliate, under which the Pfizer Affiliate purchased 1,875,000 ordinary shares from, or the Pfizer Shares, subject to certain conditions and limitations, we agreed to provide certain demand registration rights to the Pfizer Affiliate in order to register all or a portion of the Pfizer Shares purchased by the Pfizer Affiliate. We also provided the Pfizer Affiliate with certain "piggyback" registration rights for a certain period of time, subject to certain conditions and limitations, such that when we propose to register our ordinary shares for our account, the Pfizer Affiliate will have the right to include some or all of the Pfizer Shares in such registration. The Share Purchase Agreement also contains other customary terms and conditions of the parties with respect to the registration of the Pfizer Shares.

Registration Rights under our Share Purchase Agreement with Takeda

On February 19, 2018, we entered into a Share Purchase Agreement (the "Takeda Share Purchase Agreement") with Takeda Pharmaceutical Company Limited ("Takeda"), pursuant to which Takeda purchased 1,096,892 of our ordinary shares (the "Takeda Shares"). In connection with the Takeda Share Purchase Agreement, Takeda and we agreed upon certain rights and restrictions as set forth in the Investor Agreement, dated as of April 2, 2018 (the "Takeda Investor Agreement"). Subject to certain conditions and limitations, we agreed to provide certain demand registration rights to Takeda in order to register all or a portion of the Takeda Shares purchased by Takeda. We also provided Takeda with certain "piggyback" registration rights for a certain period of time, subject to certain conditions and limitations, such that when we propose to register our ordinary shares for our account, Takeda will have the right to include some or all of the Takeda Shares in such registration. The Takeda Investor Agreement also contains other customary terms and conditions of the parties with respect to the registration of Takeda Shares.

Registration Rights under our Share Purchase Agreement with GSK

On December 13, 2022, we entered into a Share Purchase Agreement (the "GSK Share Purchase Agreement") with Glaxo Group Limited ("GGL"), an affiliate of GlaxoSmithKline Intellectual Property (No. 3) ("GSK"), pursuant to which we sold 10,683,761 of our ordinary shares to GGL (the "GGL Shares"). In connection with the GSK Share Purchase Agreement, GGL and we agreed upon certain rights and restrictions as set forth in the Investor Agreement, dated as of January 26, 2023 (the "GSK Investor Agreement"). The GGL Shares are subject to a lock-up restriction, such that GGL will not, and will also cause its affiliates not to, without our prior approval, sell, transfer or otherwise dispose of the GGL Shares during the 30-month period after the effective date of the GGL Investor Agreement. For a certain period following the expiration of the lock-up period, subject to certain conditions and limitations, we agreed to provide certain demand registration rights to GGL in order to register all or a portion of the GGL Shares purchased by GGL. We also provided GGL with certain "piggyback" registration rights for a certain period following the expiration of the lock-up period, subject to certain conditions and limitations, such that when we propose to register our ordinary shares for our account, GGL will have the right to include some or all of the GGL Shares in such registration. The GSK Investor Agreement also contains other customary terms and conditions of the parties with respect to the registration of GGL Shares.

Transfer of Ordinary Shares

Subject to applicable securities laws in relevant jurisdictions and our constitution, our ordinary shares are freely transferable. Our constitution provides that shares may be transferred by a duly signed instrument of transfer in any usual or common form or in a form approved by the directors and The Nasdaq Stock Market. The directors may decline to register any transfer unless, among other things, evidence of payment of any stamp duty payable with respect to the transfer is provided together with other evidence of ownership and title as the directors may reasonably require to show the right of the transferor to make the transfer. We will replace lost or destroyed certificates for shares upon notice to us and upon, among other things, the applicant furnishing evidence and indemnity as the directors may require and the payment of all applicable fees.

Election and Re-election of Directors

We may, by ordinary resolution, remove any director before the expiration of his or her period of office, notwithstanding anything in our constitution or in any agreement between us and such director. We may also, by an ordinary resolution, appoint another person in place of a director removed from office pursuant to the foregoing.

Under our constitution, subject to the Singapore Companies Act, any director shall retire at the next annual general meeting and shall then be eligible for re-election at that meeting.

Our board of directors shall have the power, at any time and from time to time, to appoint any person to be a director either to fill a casual vacancy or as an additional director so long as the total number of directors shall not at any time exceed the maximum number (if any) fixed by or in accordance with our constitution.

Shareholders' Meetings

We are required to hold an annual general meeting each calendar year and within six months after the end of each financial year. The directors may convene an extraordinary general meeting whenever they think fit and they must do so upon the written request of shareholders holding not less than 10% of the total number of paid-up shares as of the date of deposit of the requisition carrying the right to vote at a general meeting. In addition, two or more shareholders holding not less than 10% of our total number of issued shares (excluding our treasury shares) may call a meeting of our shareholders.

The Singapore Companies Act provides that a shareholder is entitled to attend any general meeting and speak on any resolution put before the general meeting. Unless otherwise required by law or by our constitution, resolutions put forth at general meetings may be decided by ordinary resolution, requiring the affirmative vote of a majority of the shareholders present in person or represented by proxy at the meeting and entitled to vote on the resolution. An ordinary resolution suffices, for example, for appointments of directors. A special resolution, requiring an affirmative vote of not less than three-fourths of the shareholders present in person or represented by proxy at the meeting and entitled to vote on the resolution, is necessary for certain matters under Singapore law, such as an alteration of our constitution. A shareholder entitled to attend and vote at a meeting of the company, or at a meeting of any class of shareholders of the company, is entitled to appoint another person or persons, whether a shareholder of the company or not, as the shareholder's proxy to attend and vote instead of the shareholder at the meeting. Under the Singapore Companies Act, a proxy appointed to attend and vote instead of the shareholder also has the same right as the shareholder to speak at the meeting, but unless the constitution of the company otherwise provides, (i) a proxy is not entitled to vote except on a poll, (ii) a shareholder is not entitled to appoint more than two proxies to attend and vote at the same meeting and (iii) where a shareholder appoints two proxies the appointments are invalid unless the shareholder specifies the proportions of the shareholder's holdings to be represented by each proxy.

A registered shareholder having a share capital who is a relevant intermediary (as defined under the Singapore Companies Act) may appoint more than two proxies in relation to a meeting to exercise all or any of the shareholder's rights to attend and to speak and vote at the meeting, but each proxy must be appointed to exercise the rights attached to a different share or shares held by the shareholder (which number and class of shares shall be specified), and at such meeting, the proxy has the right to vote on a show of hands.

Only registered shareholders of our company, and their proxies, will be entitled to attend, speak and vote at any meeting of shareholders. Under the Singapore Companies Act, public companies may issue non-voting shares and shares that confer special, limited or conditional voting rights, such that the holder of a share may vote on a resolution before a general meeting of the company if, in accordance with the provisions of Section 64A of the Singapore Companies Act, the share confers on the holder a right to vote on that resolution.

Voting Rights

As provided under our constitution and the Singapore Companies Act, voting at any meeting of shareholders is by show of hands unless a poll has been demanded prior to the declaration of the result of the show of hands by, among others, (i) the chairman or (ii) at least one shareholder present in person or by proxy or by attorney or, in the case of a corporation, by a representative entitled to vote thereat, in each case representing in the aggregate not less than 5% of the total voting rights of all shareholders having the right to vote at the general meeting, provided that no poll shall be demanded in respect of an election of a chairman or relating to any adjournment of such meeting. On a poll every shareholder who is present in person or by proxy or by attorney, or in the case of a corporation, by a representative, has one vote for every share held by such shareholder. Proxies need not be shareholders.

Only those shareholders who are registered in our register of members as holders of ordinary shares will be entitled to vote at any meeting of shareholders. Therefore, DTC, or its nominee, will grant an omnibus proxy to DTC participants holding our shares in book-entry form through a broker, bank, nominee, or other institution that is a direct or indirect participant in the DTC. Such shareholders will have the right to instruct their broker, bank, nominee or other institution holding these shares on how to vote such shares by completing the voting instruction form provided by the applicable broker, bank, nominee, or other institution. Whether voting is by a show of hands or by a poll, DTC's vote will be voted by the chairman of the meeting according to the results of the DTC's participants' votes (which results will reflect the instructions received from shareholders that own our shares electronically in book-entry form).

Minority Rights

The rights of minority shareholders of Singapore companies are protected, among other things, under Section 216 of the Singapore Companies Act, which gives the Singapore courts a general power to make any order, upon application by any shareholder of a company, as they think fit to remedy any of the following situations:

- the affairs of a company are being conducted or the powers of the board of directors are being exercised in a manner oppressive to, or in disregard of the interests of, one or more of the shareholders, including the applicant; or
- a company takes an action, or threatens to take an action, or the shareholders pass a resolution, or propose to pass a resolution, which unfairly discriminates against, or is otherwise prejudicial to, one or more of the shareholders, including the applicant.

Singapore courts have wide discretion as to the remedy they may grant, and the remedies listed in the Singapore Companies Act itself are not exclusive. In general, Singapore courts may, with a view to bringing to an end or remedying the matters complained of:

- direct or prohibit any act or cancel or modify any transaction or resolution;
- regulate the conduct of the affairs of the company in the future;
- authorize civil proceedings to be brought in the name of, or on behalf of, the company by a person or persons and on such terms as the court may direct;
- provide for the purchase of a minority shareholder's shares by the other shareholders or by the company itself;
- in the case of a purchase of shares by the company provide for a reduction accordingly of the company's capital; or
- provide that the company be wound up.

Dividends

Subject to any preferential rights of holders of any outstanding preferred shares, holders of our ordinary shares will be entitled to receive dividends and other distributions in cash, shares or property as may be declared by our company from time to time. We may, by ordinary resolution, declare dividends at a general meeting of shareholders, but we are restricted from paying dividends in excess of the amount recommended by our board of directors. Pursuant to Singapore law and our constitution, no dividend may be paid except out of our profits. To date, we have not declared any cash dividends on our ordinary shares and have no current plans to pay cash dividends in the foreseeable future.

Bonus and Rights Issues

In a general meeting, our shareholders may, upon the recommendation of the directors, capitalize any reserves or profits and distribute them as bonus shares, credited as paid-up, to the shareholders in proportion to their shareholdings.

Subject to the provisions of the Singapore Companies Act and our constitution, our directors may also issue rights to take up additional ordinary shares to our shareholders in proportion to their respective ownership. Such rights are subject to any condition attached to such issue and the regulations of any stock exchange on which our shares are listed, as well as U.S. federal and blue sky securities laws applicable to such issue.

Takeovers

The Singapore Code on Take-overs and Mergers applies to, among other things, the acquisition of voting shares of Singapore-incorporated listed public companies or unlisted public companies with more than 50 shareholders and net tangible assets of S$5 million or more. Any person acquiring, whether by a series of transactions over a period of time or not, either on his or her own or together with parties acting in concert with such person, 30% or more of our voting shares, or, if such person holds, either on his or her own or together with parties acting in concert with such person, between 30% and 50% (both amounts inclusive) of our voting shares, and if such person (or parties acting in concert with such person) acquires additional voting shares representing more than 1% of our voting shares in any six-month period, must, except with the consent of the Securities Industry Council in Singapore, extend a mandatory takeover offer for the remaining voting shares in accordance with the provisions of the Singapore Code on Take-overs and Mergers. Responsibility for ensuring compliance with the Singapore Code on Take-overs and Mergers rests with parties (including company directors) to a take-over or merger and their advisors.

"Parties acting in concert" comprise individuals or companies who, pursuant to an agreement or understanding (whether formal or informal), cooperate, through the acquisition by any of them of shares in a company, to obtain or consolidate effective control of that company. Certain persons are presumed (unless the presumption is rebutted) to be acting in concert with each other. They are as follows:

- a company, its parent company, subsidiaries and fellow subsidiaries, the associated companies of any of the company and its related companies, subsidiaries and fellow subsidiaries, companies whose associated companies include any of these companies and any person who has provided financial assistance (other than a bank in the ordinary course of business) to any of the foregoing for the purchase of voting rights;
- a company with any of its directors (together with their close relatives, related trusts and companies controlled by any of the directors, their close relatives and related trusts);
- a company with any of its pension funds and employee share schemes;
- a person with any investment company, unit trust or other fund whose investment such person manages on a discretionary basis, but only in respect of the investment account which such person manages;
- a financial or other professional advisor, including a stockbroker, with its client in respect of the shareholdings of the advisor and persons controlling, controlled by or under the same control as the advisor;
- directors of a company (together with their close relatives, related trusts and companies controlled by any of such directors, their close relatives and related trusts) which is subject to an offer or where the directors have reason to believe a bona fide offer for their company may be imminent;
- partners; and
- an individual and (i) such person's close relatives, (ii) such person's related trusts, (iii) any person who is accustomed to act in accordance with such person's instructions, (iv) companies controlled by the individual, such person's close relatives, related trusts or any person who is accustomed to act in accordance with such person's instructions and (v) any person who has provided financial assistance (other than a bank in the ordinary course of business) to any of the foregoing for the purchase of voting rights.

Subject to certain exceptions, a mandatory offer must be in cash or be accompanied by a cash alternative at not less than the highest price paid by the offeror or parties acting in concert with the offeror during the offer period and within the six months prior to its commencement.

Under the Singapore Code on Take-overs and Mergers, where effective control of a company is acquired or consolidated by a person, or persons acting in concert, a general offer to all other shareholders is normally required. An offeror must treat all shareholders of the same class in an offeree company equally. A fundamental requirement is that shareholders in the company subject to the takeover offer must be given sufficient information, advice and time to consider and decide on the offer. These legal requirements may impede or delay a takeover of our company by a third party.

We may submit an application to the Securities Industry Council of Singapore for a waiver from the Singapore Code on Take-overs and Mergers so that the Singapore Code on Take-overs and Mergers will not apply to our company for so long as we are not listed on a securities exchange in Singapore. We will make an appropriate announcement if we submit the application and when the result of the application is known.

Liquidation or Other Return of Capital

On a winding-up or other return of capital, subject to any special rights attaching to the Series A preferred shares or to any other class of shares, holders of ordinary shares will be entitled to participate in any surplus assets in proportion to their shareholdings.

COMPARISON OF SHAREHOLDER RIGHTS

We are incorporated under the laws of Singapore. The following discussion summarizes material differences between the rights of holders of our ordinary shares and the rights of holders of the common stock of a typical corporation incorporated under the laws of the state of Delaware which result from differences in governing documents and the laws of Singapore and Delaware.

This discussion does not purport to be a complete statement of the rights of holders of our ordinary shares under applicable law in Singapore and our constitution or the rights of holders of the common stock of a typical corporation under applicable Delaware law and a typical certificate of incorporation and bylaws.

Delaware	**Singapore**
Board of Directors	
A typical certificate of incorporation and bylaws provides that the number of directors on the board of directors will be fixed from time to time by a vote of the majority of the authorized directors. Under Delaware law, a board of directors can be divided into classes and cumulative voting in the election of directors is only permitted if expressly authorized in a corporation's certificate of incorporation.	The constitution of companies will typically state the minimum and maximum number of directors as well as provide that the number of directors may be increased or reduced by shareholders via ordinary resolution passed at a general meeting, provided that the number of directors following such increase or reduction is within the maximum (if any) and minimum number of directors provided in our constitution and the Singapore Companies Act, respectively.

Delaware	Singapore
Limitation on Personal Liability of Directors and Officers	
A typical certificate of incorporation provides for the elimination of personal monetary liability of directors or officers for breach of fiduciary duties as directors or officers to the fullest extent permissible under the laws of Delaware, except for liability (i) for any breach of a director's or officer's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) of directors under Section 174 of the Delaware General Corporation Law (relating to the liability of directors for unlawful payment of a dividend or an unlawful stock purchase or redemption), (iv) for any transaction from which the director or officer derived an improper personal benefit, or (v) of officers in any action by or in the right of the corporation. A typical certificate of incorporation also provides that if the Delaware General Corporation Law is amended so as to allow further elimination of, or limitations on, director or officer liability, then the liability of directors or officers will be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law as so amended.	Pursuant to the Singapore Companies Act, any provision (whether in the constitution, a contract with the company or otherwise) exempting or indemnifying a director against any liability which by law would otherwise attach to him or her in respect of any negligence, default, breach of duty or breach of trust of which such director may be guilty in relation to the company is void. However, a company is not prohibited from (a) purchasing and maintaining for any such director insurance against any such liability, or (b) indemnifying such director against any liability incurred by him or her to a person other than the company except when the indemnity is against any liability (i) of the director to pay a fine in criminal proceedings, (ii) of the director to pay a penalty in respect of non-compliance with any regulatory requirements, (iii) incurred by the director in defending criminal proceedings in which he or she is convicted, (iv) incurred by the director in defending civil proceedings brought by the company or a related company in which judgment is given against him or her, or (v) incurred by the director in connection with an application for relief under Section 76A(13) or Section 391 of the Singapore Companies Act in which the court refuses to grant him or her relief. Nevertheless, a director can be released by the shareholders of a company for breaches of duty to a company except in the case of fraud, illegality, insolvency of the company and oppression or disregard of minority interests. Subject to the Singapore Companies Act and every other Singapore statute for the time being in force and affecting the Company, we may indemnify our directors against costs, charges, fees, and other expenses that may be incurred by any of them in defending any proceedings (whether civil or criminal) relating to anything done or omitted or alleged to be done or omitted by such person acting in his or her capacity as a director of our company, in which judgment is given in his or her favor, or in which he or she is acquitted or in which the courts have granted relief pursuant to the provisions of the Singapore Companies Act, provided that such indemnity shall not extend to any liability which by law would otherwise attach to him or her in respect of any negligence, default, breach of duty or breach of trust of which he may be guilty in relation to our company, or which would otherwise result in such indemnity being voided under applicable Singapore laws.

Delaware	Singapore
Interested Shareholders	
Section 203 of the Delaware General Corporation Law generally prohibits a Delaware corporation from engaging in specified corporate transactions (such as mergers, stock and asset sales, and loans) with an "interested stockholder" for three years following the time that the stockholder becomes an interested stockholder. Subject to specified exceptions, an "interested stockholder" is a person or group that owns 15% or more of the corporation's outstanding voting stock (including any rights to acquire stock pursuant to an option, warrant, agreement, arrangement or understanding, or upon the exercise of conversion or exchange rights, and stock with respect to which the person has voting rights only), or is an affiliate or associate of the corporation and was the owner of 15% or more of the voting stock at any time within the previous three years. A Delaware corporation may elect to "opt out" of, and not be governed by, Section 203 through a provision in either its original certificate of incorporation, or an amendment to its original certificate or bylaws that was approved by majority stockholder vote. With a limited exception, this amendment would not become effective until 12 months following its adoption.	There are no comparable provisions under the Singapore Companies Act with respect to public companies which are not listed on the Singapore Exchange Securities Trading Limited.
Removal of Directors	
A typical certificate of incorporation and bylaws provide that, subject to the rights of holders of any preferred stock, directors may be removed at any time by the affirmative vote of the holders of at least a majority, or in some instances a supermajority, of the voting power of all of the then outstanding shares entitled to vote generally in the election of directors, voting together as a single class. A certificate of incorporation could also provide that such a right is only exercisable when a director is being removed for cause (removal of a director only for cause is the default rule in the case of a classified board).	Under the Singapore Companies Act, directors of a public company may be removed before expiration of their term of office, despite anything in its constitution or in any agreement between the public company and such directors, by ordinary resolution (i.e., a resolution which is passed by a simple majority of those shareholders present and voting in person or by proxy). Notice of the intention to move such a resolution has to be given to the company not less than 28 days before the meeting at which it is moved. The company must then give notice of such resolution to its shareholders not less than 14 days before the meeting. Where any director removed in this manner was appointed to represent the interests of any particular class of shareholders or debenture holders, the resolution to remove the director does not take effect until the director's successor has been appointed.
Filling Vacancies on the Board of Directors	
A typical certificate of incorporation and bylaws provide that, subject to the rights of the holders of any preferred stock, any vacancy, whether arising through death, resignation, retirement, disqualification, removal, an increase in the number of directors or any other reason, may be filled by a majority vote of the remaining directors, even if such directors remaining in office constitute less than a quorum, or by the sole remaining director. Any newly elected director usually holds office for the remainder of the full term expiring at the annual meeting of stockholders at which the term of the class of directors to which the newly elected director has been elected expires.	The constitution of a Singapore company typically provides that the directors have the power to appoint any person to be a director, either to fill a vacancy or as an addition to the existing directors, but so that the total number of directors shall not at any time exceed the maximum number (if any) fixed by or in accordance with the constitution. Any director so appointed shall hold office until the next following annual general meeting, where such director will then be eligible for re-election. Our constitution provides that the directors may appoint any person to be a director either to fill a casual vacancy or as an additional director but so that the total number of directors shall not at any time exceed the maximum number fixed by or in accordance with the constitution.

Delaware	Singapore
Amendment of Governing Documents	
Under the Delaware General Corporation Law, amendments to a corporation's certificate of incorporation require, in general, the approval of stockholders holding a majority of the outstanding shares entitled to vote on the amendment. In certain cases, amendments to a corporation's certificate of incorporation to effect a reverse stock split or an increase or decrease in the number of authorized shares require approval of stockholders in which the votes for the amendment exceed the votes against the amendment. If a class vote on the amendment is required by the Delaware General Corporation Law, a majority of the outstanding stock of the class is required, unless a greater proportion is specified in the certificate of incorporation or by other provisions of the Delaware General Corporation Law. Under the Delaware General Corporation Law, the board of directors may amend bylaws if so authorized in the certificate of incorporation. The stockholders of a Delaware corporation also have the power to amend bylaws.	Our constitution may be altered by special resolution (i.e., a resolution passed by at least a three-fourths majority of the shareholders entitled to vote, present in person or by proxy at a meeting for which not less than 21 days' written notice is given). The board of directors has no right to amend the constitution. Under the Singapore Companies Act, an entrenching provision may be included in the constitution with which a company is formed and may at any time be inserted into the constitution of a company only if all the shareholders of the company agree. An entrenching provision is a provision of the constitution of a company to the effect that other specified provisions of the constitution may not be altered in the manner provided by the Singapore Companies Act or may not be so altered except (i) by a resolution passed by a specified majority greater than 75% (the minimum majority required by the Singapore Companies Act for a special resolution) or (ii) where other specified conditions are met. The Singapore Companies Act provides that such entrenching provision may be removed or altered only if all the members of the company agree.
Meetings of Shareholders	
Annual and Special Meetings Typical bylaws provide that annual meetings of stockholders are to be held on a date and at a time fixed by the board of directors. Under the Delaware General Corporation Law, a special meeting of stockholders may be called by the board of directors or by any other person authorized to do so in the certificate of incorporation or the bylaws.	*Annual General Meetings* All companies are required to hold an annual general meeting after the end of each financial year within either 4 months (in the case of a public company that is listed on an exchange in Singapore approved by the Monetary Authority of Singapore) or 6 months (in the case of any other company). *Extraordinary General Meetings* Any general meeting other than the annual general meeting is called an "extraordinary general meeting." Despite anything in the constitution, directors of a company must convene an extraordinary general meeting if required to do so by requisition (i.e. written notice, requiring that a meeting be called, given to the directors) by shareholder(s) holding not less than 10% of the total number of paid-up shares as at the date of the deposit of the requisition carrying the right of voting at general meetings of the company. In addition, the constitution usually also provides that general meetings may be convened in accordance with the Singapore Companies Act by the directors.
Quorum Requirements Under the Delaware General Corporation Law, a corporation's certificate of incorporation or bylaws can specify the number of shares which constitute the quorum required to conduct business at a meeting, provided that in no event shall a quorum consist of less than one-third of the shares entitled to vote at a meeting.	*Quorum Requirements* Our constitution provides that any two shareholders present in person or by proxy or by attorney or, in the case of a corporation, by a representative and entitled to vote thereat; in each case representing in aggregate not less than a majority of the total voting rights of all shareholders having the right to vote at a general meeting, shall constitute a quorum. In the event a quorum is not present, the meeting if not convened on the requisition of shareholders may be adjourned for one week. When reconvened, the quorum for the meeting will be the same and if at such adjourned meeting a quorum is not present, the meeting will be dissolved.

Delaware	Singapore
	Shareholders' Rights at Meetings
	The Singapore Companies Act provides that every member has, despite any provision in the constitution, a right to attend any general meeting of the company and to speak on any resolution before the meeting. The company's constitution may provide that a member shall not be entitled to vote unless all calls or other sums personally payable by the member in respect of shares in the company have been paid.
	Public companies may issue non-voting shares and shares that confer special, limited and conditional voting rights, such that the holder of a share may vote on a resolution before a general meeting if, in accordance with the provisions of Section 64A of the Singapore Companies Act, the share confers on the holder a right to vote on the resolution.
	Circulation of Shareholders' Resolutions
	Under the Singapore Companies Act, (a) any number of shareholders representing not less than 5% of the total voting rights of all the shareholders having at the date of requisition a right to vote at a meeting to which the requisition relates or (b) not less than 100 shareholders holding shares on which there has been paid up an average sum, per shareholder, of not less than S$500, may requisition the company to give to shareholders notice of any resolution which may properly be moved and is intended to be moved at the next annual general meeting, and circulate to shareholders any statement of not more than 1,000 words with respect to the matter referred to in any proposed resolution or the business to be dealt with at that meeting.

Delaware

Indemnification of Officers, Directors and Employees

Under the Delaware General Corporation Law, subject to specified limitations in the case of derivative suits brought by a corporation's stockholders in its name, a corporation may indemnify any person who is made a party to any third-party action, suit or proceeding on account of being a director, officer, employee or agent of the corporation (or was serving at the request of the corporation in such capacity for another corporation, partnership, joint venture, trust or other enterprise) against expenses, including attorney's fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with the action, suit or proceeding through, among other things, a majority vote of a quorum consisting of directors who were not parties to the suit or proceeding, if the person:

- acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation or, in some circumstances, at least not opposed to its best interests; and
- in a criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Delaware corporate law permits indemnification by a corporation under similar circumstances for expenses (including attorneys' fees) actually and reasonably incurred by such persons in connection with the defense or settlement of a derivative action or suit, except that no indemnification may be made in respect of any claim, issue or matter as to which the person is adjudged to be liable to the corporation unless the Delaware Court of Chancery or the court in which the action or suit was brought determines upon application that the person is fairly and reasonably entitled to indemnity for the expenses which the court deems to be proper.

To the extent a director, officer, employee or agent is successful in the defense of such an action, suit or proceeding, the corporation is required by Delaware corporate law to indemnify such person for reasonable expenses incurred thereby. Expenses (including attorneys' fees) incurred by such persons in defending any action, suit or proceeding may be paid in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of that person to repay the amount if it is ultimately determined that that person is not entitled to be so indemnified.

Singapore

Under Section 172 of the Singapore Companies Act, any provision exempting or indemnifying the officers of a company (including directors) against liability, which by law would otherwise attach to them in connection with any negligence, default, breach of duty or breach of trust in relation to the company is void.

However, the Singapore Companies Act allows a company to:

- purchase and maintain for any officer insurance against any liability which by law would otherwise attach to such officer in connection with any negligence, default, breach of duty or breach of trust in relation to the company;
- indemnify such officer against any liability incurred by him or her to a person other than the company except when the indemnity is against any liability (i) of the officer to pay a fine in criminal proceedings, (ii) of the officer to pay a penalty in respect of non-compliance with any regulatory requirements, (iii) incurred by the officer in defending criminal proceedings in which he or she is convicted, (iv) incurred by the officer in defending civil proceedings brought by the company or a related company in which judgment is given against him or her, or (v) incurred by the officer in connection with an application for relief under Section 76A(13) or Section 391 of the Singapore Companies Act in which the court refuses to grant him or her relief.

In cases where a director is sued by the company, the Singapore Companies Act gives the court the power to relieve directors either wholly or partially from their liability for their negligence, default, breach of duty or breach of trust. In order for relief to be obtained, it must be shown that (i) the director acted reasonably and honestly; and (ii) it is fair, having regard to all the circumstances of the case including those connected with such director's appointment, to excuse the director. However, Singapore case law has indicated that such relief will not be granted to a director who has benefited as a result of his or her breach of trust.

Our constitution provides that subject to the provisions of the Singapore Companies Act and every other applicable statute for the time being in force concerning companies and affecting the company, the directors and officers are entitled to be indemnified against costs, charges, fees and other expenses that may be incurred by such person in defending any proceedings, whether civil or criminal, which relates to anything done or omitted or alleged to be done or omitted by such person as a director, officer or employee of the company and in which judgment is given in his or her favor or in which such person is acquitted or in which the courts have granted relief pursuant to the provisions of the Singapore Companies Act, provided that such indemnity shall not extend to any liability which by law would otherwise attach to him or her in respect of any negligence, default, breach of duty or breach of trust of which he or she may be guilty in relation to the company, or which would otherwise result in such indemnity being voided under applicable Singapore laws.

Delaware	Singapore
Shareholder Approval of Issuances of Shares	
Under Delaware law, the board of directors has the authority to issue, from time to time, capital stock in its sole discretion, as long as the number the shares to be issued, together with those shares that are already issued and outstanding and those shares reserved to be issued, do not exceed the authorized capital for the corporation as previously approved by the stockholders and set forth in the corporation's certificate of incorporation. Under the foregoing circumstances, no additional stockholder approval is required for the issuance of capital stock. Under Delaware law, stockholder approval is required (i) for any amendment to the corporation's certificate of incorporation to increase the authorized capital and (ii) for the issuance of stock in a direct merger transaction where the number of shares exceeds 20% of the corporation's shares outstanding prior to the transaction, regardless of whether there is sufficient authorized capital.	Section 161 of the Singapore Companies Act provides that despite anything in the company's constitution, the directors must not exercise any power to issue shares without prior approval of Company's shareholders in a general meeting. The affirmative vote of shareholders holding at least a majority of the ordinary shares held by the shareholders present in person or represented by proxy at the annual general meeting and entitled to vote is required for this authorization. Once this shareholders' approval is obtained, unless previously revoked or varied by the company in general meeting, it continues in force until the conclusion of the next annual general meeting or the expiration of the period within which the next annual general meeting after that date is required by law to be held, whichever is earlier; but any approval may be revoked or varied by the company in general meeting. Notwithstanding this general authorization to allot and issue our ordinary shares, Wave will be required to seek shareholder approval with respect to future issuances of ordinary shares, where required under The Nasdaq Stock Market rules, such as if we were to propose an issuance of ordinary shares that would result in a change in control of Wave or in connection with certain transactions involving the issuance of ordinary shares representing 20% or more of our outstanding ordinary shares.

Delaware	Singapore
Shareholder Approval of Business Combinations	
Generally, under the Delaware General Corporation Law, completion of a merger, consolidation, or the sale, lease or exchange of substantially all of a corporation's assets or dissolution requires approval by the board of directors and by a majority (unless the certificate of incorporation requires a higher percentage) of outstanding stock of the corporation entitled to vote. The Delaware General Corporation Law also requires a special vote of stockholders in connection with a business combination with an "interested stockholder" as defined in section 203 of the Delaware General Corporation Law. See "—Interested Shareholders" above.	The Singapore Companies Act and the Insolvency, Restructuring and Dissolution Act 2018 mandates that specified corporate actions require approval by the shareholders in a general meeting, notably: • despite anything in the company's constitution, directors must not carry into effect any proposals for disposing of the whole or substantially the whole of the company's undertaking or property unless those proposals have been approved by shareholders in a general meeting; • the company may by special resolution resolve that it be wound up voluntarily; • subject to the constitution of each amalgamating company, an amalgamation proposal must be approved by the shareholders of each amalgamating company via special resolution at a general meeting; • a compromise or arrangement proposed between a company and its shareholders, or any class of them, must, among other things, be approved by a majority in number representing three-fourths in value of the shareholders or class of shareholders present and voting either in person or by proxy at the meeting ordered by the court; and • despite anything in the company's constitution, the directors must not, without the prior approval of shareholders, issue shares, including shares being issued in connection with corporate actions.
Shareholder Action Without A Meeting	
Under the Delaware General Corporation Law, unless otherwise provided in a corporation's certificate of incorporation, any action that may be taken at a meeting of stockholders may be taken without a meeting, without prior notice and without a vote if the holders of outstanding stock, having not less than the minimum number of votes that would be necessary to authorize such action, consent in writing. It is not uncommon for a corporation's certificate of incorporation to prohibit such action.	There are no equivalent provisions under the Singapore Companies Act in respect of public companies which are listed on a securities exchange, like our company.

Delaware	Singapore
Shareholder Suits	
Under the Delaware General Corporation Law, a stockholder may bring a derivative action on behalf of the corporation to enforce the rights of the corporation. An individual also may commence a class action suit on behalf of himself or herself and other similarly situated stockholders where the requirements for maintaining a class action under the Delaware General Corporation Law have been met. A person may institute and maintain such a suit only if such person was a stockholder at the time of the transaction which is the subject of the suit or his or her shares thereafter devolved upon him or her by operation of law. Additionally, under Delaware case law, the plaintiff generally must be a stockholder not only at the time of the transaction which is the subject of the suit, but also through the duration of the derivative suit. The Delaware General Corporation Law also requires that the derivative plaintiff make a demand on the directors of the corporation to assert the corporate claim before the suit may be prosecuted by the derivative plaintiff, unless such demand would be futile.	*Standing* Only registered shareholders of our company reflected in our register of members are recognized under Singapore law as shareholders of our company. As a result, only registered shareholders have legal standing to institute shareholder actions against us or otherwise seek to enforce their rights as shareholders. Holders of book-entry interests in our shares will be required to exchange their book-entry interests for certificated shares and to be registered as shareholders in our shareholder register in order to institute or enforce any legal proceedings or claims against us, our directors or our executive officers relating to shareholder rights. A holder of book-entry interests may become a registered shareholder of our company by exchanging its interest in our shares for certificated shares and being registered in our shareholder register. *Personal remedies in cases of oppression or injustice* A shareholder may apply to the court for an order under Section 216 of the Singapore Companies Act to remedy situations where (i) the company's affairs are being conducted or the powers of the company's directors are being exercised in a manner oppressive to, or in disregard of the interests of one or more of the shareholders or holders of debentures of the company, including the applicant; or (ii) the company has done an act, or threatens to do an act, or the shareholders or holders of debentures have passed some resolution, which unfairly discriminates against, or is otherwise prejudicial to, one or more of the company's shareholders or holders of debentures, including the applicant. Singapore courts have wide discretion as to the relief they may grant under such application, including, *inter alia*, directing or prohibiting any act or cancelling or varying any transaction or resolution, providing that the company be wound up, or authorizing civil proceedings to be brought in the name of or on behalf of the company by such person or persons and on such terms as the court directs.

Delaware	Singapore
	Derivative actions and arbitrations The Singapore Companies Act has a provision which provides a mechanism enabling shareholders to apply to the court for leave to bring a derivative action or commence an arbitration on behalf of the company. Derivative actions are also allowed as a common law action. Applications are generally made by shareholders of the company, but courts are given the discretion to allow such persons as they deem proper to apply (e.g., beneficial owner of shares). It should be noted that this provision of the Singapore Companies Act is primarily used by minority shareholders to bring an action or arbitration in the name and on behalf of the company or intervene in an action or arbitration to which the company is a party for the purpose of prosecuting, defending or discontinuing the action or arbitration on behalf of the company. Prior to commencing a derivative action or arbitration, the court must be satisfied that (i) 14 days' notice has been given to the directors of the company of the party's intention to commence such action or arbitration if the directors of the company do not bring, diligently prosecute or defend or discontinue the action, (ii) the party is acting in good faith and (iii) it appears to be prima facie in the interests of the company that the action be brought, prosecuted, defended or discontinued. *Class actions* The concept of class action suits in the United States, which allows individual shareholders to bring an action seeking to represent the class or classes of shareholders, does not exist in the same manner in Singapore. In Singapore, it is possible as a matter of procedure for a number of shareholders who have a common interest in any proceedings, to begin proceedings as a group with one or more of such shareholders representing the group.
Distributions and Dividends; Repurchases and Redemptions	
The Delaware General Corporation Law permits a corporation to declare and pay dividends out of statutory surplus or, if there is no surplus, out of net profits for the fiscal year in which the dividend is declared and/or for the preceding fiscal year as long as the amount of capital of the corporation following the declaration and payment of the dividend is not less than the aggregate amount of the capital represented by the issued and outstanding stock of all classes having a preference upon the distribution of assets. Under the Delaware General Corporation Law, any corporation may purchase or redeem its own shares, except that generally it may not purchase or redeem these shares if the capital of the corporation is impaired at the time or would become impaired as a result of the redemption. A corporation may, however, purchase or redeem out of capital shares that are entitled upon any distribution of its assets to a preference over another class or series of its shares if the shares are to be retired and the capital reduced.	The Singapore Companies Act provides that no dividend is payable to the shareholders of any company except out of profits. The Singapore Companies Act does not provide a definition on when profits are deemed to be available for the purpose of paying dividends and this is accordingly governed by case law. Our constitution provides that no dividend can be paid otherwise than out of profits.

Delaware

Singapore

Acquisition of a company's own shares

The Singapore Companies Act generally prohibits a company from acquiring its own shares or purporting to acquire the shares of its holding company or ultimate holding company, whether directly or indirectly, in any way, subject to certain exceptions. Any contract or transaction made or entered into in contravention of the aforementioned prohibition by which a company acquires or purports to acquire its own shares or shares in its holding company or ultimate holding company is void. However, provided that it is expressly permitted to do so by its constitution and subject to the special conditions of each permitted acquisition contained in the Singapore Companies Act, a company may:

- redeem redeemable preferred shares on such terms and in such manner as is provided by its constitution. Preferred shares may be redeemed out of capital only if all the directors make a solvency statement in relation to such redemption in accordance with the Singapore Companies Act, and the company lodges a copy of the statement with the Registrar of Companies;
- whether listed on an exchange in Singapore approved by the Monetary Authority of Singapore or any securities exchange outside Singapore, or not, make an off-market purchase of its own shares in accordance with an equal access scheme authorized in advance at a general meeting;
- make a selective off-market purchase of its own shares in accordance with an agreement authorized in advance at a general meeting by a special resolution where persons whose shares are to be acquired and their associated persons have abstained from voting; and
- whether listed on an exchange in Singapore approved by the Monetary Authority of Singapore or any securities exchange outside Singapore, or not, make an acquisition of its own shares under a contingent purchase contract which has been authorized in advance at a general meeting by a special resolution.

A company may also purchase its own shares by an order of a Singapore court.

Delaware

Singapore

- The total number of ordinary shares, stocks in any class and non-redeemable preferred shares that may be acquired by a company in a relevant period must not exceed 20% (or such other prescribed percentage) of the total number of ordinary shares, stocks in any class or non-redeemable preferred shares (as the case may be) as of the date of the resolution to acquire the shares. Where, however, a company has reduced its share capital by a special resolution or a Singapore court made an order to such effect, the total number of ordinary shares, stocks in any class or non-redeemable preferred shares shall be taken to be the total number of ordinary shares, stocks in any class or non-redeemable preferred shares (as the case may be) as altered by the special resolution or the order of the court. Payment, including any expenses (including brokerage or commission) incurred directly in the acquisition by the company of its own shares, may be made out of the company's profits or capital, provided that the company is solvent.

Financial assistance for the acquisition of shares

A public company or a company whose holding company or ultimate holding company is a public company must not give financial assistance to any person whether directly or indirectly for the purpose of or in connection with:

- the acquisition or proposed acquisition of shares in the company or units of such shares; or
- the acquisition or proposed acquisition of shares in its holding company or ultimate holding company, or units of such shares.

Financial assistance may take the form of a loan, the giving of a guarantee, the provision of security, the release of an obligation, the release of a debt or otherwise.
However, it should be noted that a company may provide financial assistance for the acquisition of its shares or shares in its holding company or ultimate holding company if it complies with the requirements (including approval by special resolution) set out in the Singapore Companies Act.

Our constitution provides that subject to the provisions of the Singapore Companies Act, we may purchase or otherwise acquire our own shares upon such terms and subject to such conditions as we may deem fit. We may deal with any such shares which is so purchased or acquired by us in such manner as may be permitted under the Singapore Companies Act (including, without limitation, hold such shares as treasury shares).

Delaware	Singapore
Transactions with Officers or Directors	
Under the Delaware General Corporation Law, some contracts or transactions in which one or more of a corporation's directors has an interest are not void or voidable because of such interest provided that some conditions, such as obtaining the required approval and fulfilling the requirements of good faith and full disclosure, are met. Under the Delaware General Corporation Law, either (a) the stockholders or the board of directors of a corporation must approve in good faith any such contract or transaction after full disclosure of the material facts or (b) the contract or transaction must have been "fair" as to the corporation at the time it was approved. If board approval is sought, the contract or transaction must be approved in good faith by a majority of disinterested directors after full disclosure of material facts, even though less than a majority of a quorum.	Under the Singapore Companies Act, directors and the chief executive officer of the company are not prohibited from dealing with the company, but where they have an interest, whether directly or indirectly, in a transaction with the company, that interest must be disclosed to the board of directors. In particular, every director or chief executive officer who is in any way, whether directly or indirectly, interested in a transaction or proposed transaction with the company must, as soon as is practicable after the relevant facts have come to such director's or, as the case may be, the chief executive officer's knowledge, declare the nature of such interest at a meeting of the directors or send a written notice to the company detailing the nature, character and extent of the interest. In addition, a director or chief executive officer who holds any office or possesses any property which directly or indirectly might create interests in conflict with such director's or, as the case may be, the chief executive officer's duties as director or chief executive officer is required to declare the fact and the nature, character and extent of the conflict at a meeting of directors or send a written notice to the company detailing the nature, character and extent of the conflict. The Singapore Companies Act extends the scope of this statutory duty of a director and chief executive officer to disclose any interests by pronouncing that an interest of a member of a director's or, as the case may be, the chief executive officer's family (including spouse, son, adopted son, step-son, daughter, adopted daughter and step-daughter) will be treated as an interest of the director or chief executive officer (as the case may be). A director or chief executive officer is not deemed to be interested or to have been at any time interested in any transaction or proposed transaction where the interest of the director or chief executive officer (as the case may be) consists only of being a member or creditor of a corporation which is interested in the transaction or proposed transaction with the company if the interest may properly be regarded as immaterial. Where the transaction or the proposed transaction relates to any loan to the company, no disclosure need be made where the director or chief executive officer (as the case may be) has only guaranteed the repayment of such loan, unless the constitution provides otherwise. Further, where any transaction or proposed transaction has been or will be made with or for the benefit of or on behalf of a related corporation (i.e., the holding company, subsidiary or subsidiary of a common holding company), the director or chief executive officer is not deemed to be interested or to have been at any time interested in such transaction or proposed transaction by virtue of only being a director or chief executive officer (as the case may be) of the related corporation, unless the constitution provides otherwise.

Delaware	Singapore
	Subject to specified exceptions, the Singapore Companies Act prohibits a company (other than an exempt private company) from, among others, (i) making a loan or a quasi-loan to its directors or to directors of a related corporation, or giving a guarantee or security in connection with such a loan or quasi-loan, (ii) entering into a credit transaction as creditor for the benefit of its directors or the directors of a related corporation, or giving a guarantee or any security in connection with such a credit transaction, (iii) arranging an assignment to or assumption by us of any rights, obligations or liabilities under a transaction which, if it had been entered into by us, would have been a restricted transaction, and (iv) taking part in an arrangement under which another person enters into a transaction which, if entered into by us, would have been a restricted transaction and such person obtains a benefit from us or our related corporation pursuant thereto. Companies are also prohibited from entering into any of these transactions with the spouse or children (whether adopted or natural or step-children) of its directors.
	Subject to specified exceptions, the Singapore Companies Act prohibits a company (other than an exempt private company) from making a loan or a quasi-loan to another company or a limited liability partnership or entering into any guarantee or providing any security in connection with a loan or a quasi-loan made to another company or a limited liability partnership by a person other than the first-mentioned company, entering into a credit transaction as a creditor for the benefit of another company or a limited liability partnership, or entering into any guarantee or provide any security in connection with a credit transaction entered into by any person for the benefit of another company or a limited liability partnership if a director or directors of the first-mentioned company is or together are interested in 20% or more of the total voting power in the other company or the limited liability partnership (as the case may be).
	Such prohibition also applies to a loan or quasi-loan made by a company (other than an exempt private company), a credit transaction made by a company (other than an exempt private company) for the benefit of another company or limited liability partnership and a guarantee entered into or security provided by a company (other than an exempt private company) in connection with a loan or quasi-loan made by a person other than the first-mentioned company to another company or a limited liability partnership or with a credit transaction made for the benefit of another company or limited liability partnership entered into by a person other than the first-mentioned company, where such other company or limited liability partnership is incorporated or formed (as the case may be) outside Singapore, if a director or directors of the first-mentioned company (a) is or together are interested in 20% or more of the total voting power in the other company or limited liability partnership or (b) in a case where the other company does not have a share capital, exercises or together exercise control over the other company whether by reason of having the power to appoint directors or otherwise.
	The Singapore Companies Act also provides that an interest of a member of a director’s family (including spouse, son, adopted son, step-son, daughter, adopted daughter and step-daughter) will be treated as an interest of the director.

Delaware	Singapore
Dissenters' Rights	
Under the Delaware General Corporation Law, a stockholder of a corporation participating in some types of major corporate transactions may, under varying circumstances, be entitled to appraisal rights pursuant to which the stockholder may receive cash in the amount of the fair market value of his or her shares in lieu of the consideration he or she would otherwise receive in the transaction.	There are no equivalent provisions in Singapore under the Singapore Companies Act.
Cumulative Voting	
Under the Delaware General Corporation Law, a corporation may adopt in its bylaws that its directors shall be elected by cumulative voting. When directors are elected by cumulative voting, a stockholder has the number of votes equal to the number of shares held by such stockholder times the number of directors nominated for election. The stockholder may cast all of such votes for one director or among the directors in any proportion.	There are no equivalent provisions in Singapore under the Singapore Companies Act.

Exhibit 31.1

CERTIFICATIONS UNDER SECTION 302

I, Paul B. Bolno, M.D., MBA, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Wave Life Sciences Ltd.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 3, 2023

By: /s/ Paul B. Bolno, M.D., MBA
Paul B. Bolno, M.D., MBA
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS UNDER SECTION 302

I, Kyle Moran, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Wave Life Sciences Ltd.;

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

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

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

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 3, 2023

By: /s/ Kyle Moran
Kyle Moran
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32

CERTIFICATIONS UNDER SECTION 906

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), each of the undersigned officers of Wave Life Sciences Ltd. (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report for the quarter ended June 30, 2023 (the "Form 10-Q") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 3, 2023

/s/ Paul B. Bolno, M.D., MBA
Paul B. Bolno, M.D., MBA
President and Chief Executive Officer
(Principal Executive Officer)

Dated: August 3, 2023

/s/ Kyle Moran
Kyle Moran
Chief Financial Officer
(Principal Financial Officer)