Wave Life Sciences Reports Second Quarter 2019 Financial Results and Provides Business Update

July 29, 2019

Interim efficacy data from ongoing suvodirsen open-label extension study on track for 4Q 2019

Phase 2/3 DYSTANCE 51 global, placebo-controlled study of suvodirsen initiated

First topline data from PRECISION-HD clinical program expected by year-end

CAMBRIDGE, Mass., July 29, 2019 (GLOBE NEWSWIRE) -- Wave Life Sciences Ltd. (Nasdaq: WVE), a clinical-stage genetic medicines company committed to delivering life-changing treatments for people battling devastating diseases, today announced financial results for the second quarter ended June 30, 2019 and provided a business update.

"Wave continues to make significant progress in advancing its pipeline and I am pleased to report that we are on track to deliver data from our first two clinical programs by the end of the year. First, we expect to share dystrophin biopsy data from the ongoing open-label extension study of investigational suvodirsen for the treatment of Duchenne muscular dystrophy (DMD) patients amenable to exon 51 skipping, followed by the first clinical data for our differentiated, allele-selective approach to treating Huntington's disease," said Paul Bolno, MD, MBA, President and Chief Executive Officer of Wave Life Sciences. "For suvodirsen, the recent initiation of our Phase 2/3 DYSTANCE 51 trial marks a significant milestone towards our goal of bringing new therapies to patients living with DMD globally. Lastly, we are leveraging our PRISM platform to advance several exciting preclinical programs in DMD, HD, ALS/FTD and ophthalmology."

Business Update

Wave is committed to building a fully integrated genetic medicines company led by its clinical and preclinical programs for the treatment of neuromuscular, central nervous system and ophthalmologic diseases.

Neuromuscular Diseases

First clinical dystrophin data from the suvodirsen open-label extension study for DMD patients amenable to exon 51 skipping are expected in 4Q 2019

- Suvodirsen is currently being studied in an open-label extension (OLE) study in boys with Duchenne muscular dystrophy (DMD) who are amenable to exon 51 skipping. The study was initiated in August 2018 with patients from the Phase 1 clinical trial. Wave is on track to deliver an interim analysis of dystrophin expression from muscle biopsies in boys receiving suvodirsen, which is expected in the fourth quarter of 2019. This interim analysis will include dystrophin expression from muscle biopsies taken 22 weeks after patients enrolled in the OLE were transitioned to one of the Phase 2/3 doses of suvodirsen, as well as a safety summary.

- In June at the 2019 Parent Project Muscular Dystrophy (PPMD) Annual Conference, Wave reported an apparent decline in infusion-associated symptoms with continued weekly dosing of suvodirsen in the OLE among the 25 patients (of 37 expected to enroll) dosed at the Phase 2/3 doses as of June 18, 2019. In total, 148 doses had been administered and there were no study discontinuations in patients receiving Phase 2/3 doses as of the data cut off.

- The company expects to file for an accelerated approval of suvodirsen in the United States in the second half of 2020, pending positive clinical dystrophin expression data.

Initiated Phase 2/3 DYSTANCE 51 clinical trial, the results of which are intended to support global regulatory filings for suvodirsen

- In June 2019, Wave announced the initiation of DYSTANCE 51, its global Phase 2/3, multicenter, randomized, double-blind, placebo-controlled trial that will evaluate the efficacy and safety of suvodirsen. The trial is expected to enroll approximately 150 boys who are between 5 and 12 years of age (inclusive) with a genetically confirmed diagnosis of DMD amenable to exon 51 skipping therapy. The DYSTANCE 51 primary efficacy endpoints will measure change in dystrophin protein level and change in the North Star Ambulatory Assessment score. In addition, the trial will include multiple functional outcome measures as secondary efficacy endpoints.

- DYSTANCE 51 is the first study ever selected by the U.S. Food and Drug Administration (FDA) for its Complex Innovative Trial Design (CID) pilot program, through which Wave may potentially use Bayesian methods to adapt the trial with the aim of maximizing efficiency while ensuring robust clinical results.

- Results from the DYSTANCE 51 trial are intended to support global regulatory filings for suvodirsen.

Advancing an exon-skipping pipeline to address more patients living with DMD

- Wave continues to advance WVE-N531, its preclinical candidate to treat DMD in boys amenable to exon 53 skipping. WVE-N531 induced up to 71% dystrophin protein restoration in DMD *in vitro* patient-derived myoblasts compared with healthy human myoblasts as measured by western blot. Subject to submission of clinical trial applications and approval to proceed, Wave expects to deliver topline clinical data for WVE-N531 in the second half of 2020.

- The company is also exploring exon targets beyond those targeted by suvodirsen and WVE-N531, including exons 44, 45, 52, 54 and 55.

Central Nervous System (CNS) Diseases

First topline results from the PRECISION-HD clinical program are anticipated by year-end and will be the first data for an allele-selective approach to treating Huntington's disease patients

- Wave's PRECISION-HD program consists of two global, multicenter, double-blind, randomized, placebo-controlled Phase 1b/2a clinical trials, PRECISION-HD1 and PRECISION-HD2, for patients with Huntington's disease (HD). PRECISION-HD1 and PRECISION-HD2 are evaluating investigational WVE-120101 and WVE-120102, respectively, which are stereopure antisense oligonucleotides designed to selectively target the mutant huntingtin (mHTT) mRNA transcript of SNP rs362307 (SNP1) and SNP rs362331 (SNP2), respectively. Approximately 50% of the HD population carries SNP1 or SNP2 and, with overlap, up to 70% of the HD population carries either SNP1, SNP2 or both. Topline results for both trials are expected to include a summary of clinical safety results, the degree of mutant huntingtin protein lowering in cerebrospinal fluid (CSF) at 20 weeks, and the ratio of total huntingtin versus mutant huntingtin protein in CSF at 20 weeks to assess wild-type huntingtin protein.

- PRECISION-HD2 is fully recruited and dosing in the fourth cohort is underway to deliver topline clinical data from the four multi-dose cohorts, which are expected by the end of 2019. For the PRECISION-HD1 trial, the first two multi-dose cohorts are fully recruited, dosing and expected to be complete by the end of 2019. Data from the four multi-dose cohorts of PRECISION-HD1 are expected in early 2020. The timing of PRECISION-HD1 data is affected by inherent sampling variability in the relative SNP frequencies for each patient group screened. Overall, the frequencies of SNP1 and SNP2 remain consistent with Wave's observational study and published literature (up to 70%). Going forward, Wave expects to direct all patients that screen positive for both SNP1 and SNP2, as well as those who are positive for SNP1 only, towards the PRECISION-HD1 trial sites.

- WVE-120101 and WVE-120102, which selectively target the mutant allele of the *huntingtin* (*HTT*) gene, have been shown to reduce levels of mutant *HTT* mRNA and protein, while leaving wild-type or healthy *HTT* mRNA and protein largely intact in *in vitro* studies with patient-derived cell-lines. The healthy transcript is required to produce healthy HTT protein which is important for neuronal function. Multiple preclinical studies in the literature indicate that long-term suppression of healthy HTT protein may have detrimental consequences. Wave's allele-selective approach may also enable the company to address the pre-manifest, or asymptomatic, HD patient population in the future.

Advancing several additional development programs for CNS diseases

- Wave is advancing WVE-C092 in amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD), which preferentially targets the transcript containing the GGGGCC (G4C2) expansion in the *C9ORF72* gene. Subject to the submission of clinical trial applications and approval to proceed, the company would expect to initiate clinical development of WVE-C092 in the second half of 2020.

- The company is utilizing the learnings from PRISM ™ to design additional stereopure oligonucleotides with optimized profiles across other CNS diseases as part of its ongoing collaboration with Takeda.

Ophthalmologic Diseases

- Wave continues to advance stereopure oligonucleotides for the potential treatment of inherited retinal diseases. Preclinical data demonstrated that a single intravitreal injection of stereopure oligonucleotide in the eye of non-human primates resulted in greater than 95% knockdown of a target RNA in the retina for at least four months. Based on these data, the company is working to design clinical candidates that could achieve a therapeutic effect with only two doses per year. The company expects to announce its first ophthalmology candidate in the second half of 2019.

Second Quarter 2019 Financial Results and Financial Guidance

Wave reported a net loss of $41.9 million in the second quarter of 2019 as compared to $35.9 million in the same period in 2018. The increase in net

loss in the second quarter of 2019 was largely driven by increased research and development efforts and continued organizational growth to support Wave's corporate goals.

Research and development expenses were $41.6 million in the second quarter of 2019 as compared to $32.5 million in the same period in 2018. The increase in research and development expenses in the second quarter of 2019 was primarily due to increased external expenses related to our suvodirsen clinical activities as well as increased investments in PRISM and other research and development expenses.

General and administrative expenses were $11.6 million in the second quarter of 2019 as compared to $8.9 million in the same period in 2018. The increase in general and administrative expenses in the second quarter of 2019 was mainly driven by increases in employee headcount to support Wave's corporate goals.

As of June 30, 2019, Wave had $252.9 million in cash and cash equivalents as compared to $174.8 million as of December 31, 2018. The increase in cash and cash equivalents was mainly due to the $161.8 million in net proceeds from the January 2019 follow-on offering, partially offset by Wave's year-to-date net loss of $86.1 million.

Wave expects that its existing cash and cash equivalents, together with expected and committed cash from existing collaborations, will enable Wave to fund its operating and capital expenditure requirements to the end of 2020.

About PRISM ™

PRISM is Wave Life Sciences' proprietary discovery and drug development platform that enables genetically defined diseases to be targeted with stereopure oligonucleotides across multiple therapeutic modalities. PRISM combines the company's unique ability to construct stereopure oligonucleotides with a deep understanding of how the interplay among oligonucleotide sequence, chemistry and backbone stereochemistry impacts key pharmacological properties. By exploring these interactions through iterative analysis of in vitro and in vivo outcomes and artificial intelligence-driven predictive modeling, the company continues to define design principles that are deployed across programs to rapidly develop and manufacture clinical candidates that meet pre-defined product profiles.

About Wave Life Sciences

Wave Life Sciences (NASDAQ: WVE) is a clinical-stage genetic medicines company committed to delivering life-changing treatments for people battling devastating diseases. Wave aspires to develop best-in-class medicines across multiple therapeutic modalities using PRISM, the company's proprietary discovery and drug development platform that enables the precise design, optimization and production of stereopure oligonucleotides. Driven by a resolute sense of urgency, the Wave team is targeting a broad range of genetically defined diseases so that patients and families may realize a brighter future. To find out more, please visit www.wavelifesciences.com and follow Wave on Twitter @WaveLifeSci.

Forward-Looking Statements

This press release contains forward-looking statements concerning our goals, beliefs, expectations, strategies, objectives and plans, and other statements that are not necessarily based on historical facts, including statements regarding the following, among others: the anticipated commencement, patient enrollment, data readouts and completion of our clinical trials, and the announcement of such events; the protocol, design and endpoints of our ongoing and planned clinical trials; the future performance and results of our programs in clinical trials; future preclinical activities and programs; the progress and potential benefits of our collaborations with partners; the potential of our in vitro and in vivo preclinical data to predict the behavior of our compounds in humans; our identification of future candidates and their therapeutic potential; the anticipated therapeutic benefits of our potential therapies compared to others; our ability to design compounds using multiple modalities and the anticipated benefits of that model; the anticipated benefits of our proprietary manufacturing processes and our internal manufacturing facility; our future growth and anticipated transition to a fully integrated commercial-stage company; the potential benefits of PRISM and our stereopure oligonucleotides compared with stereorandom oligonucleotides; the benefit of nucleic acid therapeutics generally; the strength of our intellectual property; and the anticipated duration of our cash runway. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including the following: our ability to finance our drug discovery and development efforts and to raise additional capital when needed; the ability of our preclinical programs to produce data sufficient to support our 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 of our programs, which may not support further development of product candidates; actions of regulatory agencies, which may affect the initiation, timing and progress of clinical trials; our effectiveness in managing future clinical trials and regulatory processes; the effectiveness of PRISM; the continued development and acceptance of oligonucleotides as a class of medicines; our ability to demonstrate the therapeutic benefits of our candidates in clinical trials, including our ability to develop candidates across multiple therapeutic modalities; our dependence on third parties, including contract research organizations, contract manufacturing organizations, collaborators and partners; our ability to manufacture or contract with third parties to manufacture drug material to support our programs and growth; 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; and competition from others developing therapies for similar uses, as well as the information under the caption "Risk Factors" contained in our most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission (SEC) and in other filings we make with the SEC from time to time. We undertake no obligation to update the information contained in this press release to reflect subsequently occurring events or circumstances.

WAVE LIFE SCIENCES LTD.
UNAUDITED CONSOLIDATED BALANCE SHEETS

(In thousands, except share amounts)

	June 30, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 252,906	$ 174,819
Current portion of accounts receivable	20,000	10,000
Prepaid expenses and other current assets	16,685	17,454

Total current assets	289,591	202,273
Long-term assets:		
Accounts receivable, net of current portion	30,000	50,000
Property and equipment, net	38,363	39,931
Operating lease right-of-use assets	18,937	—
Restricted cash	3,637	3,625
Other assets	5,019	111
Total long-term assets	95,956	93,667
Total assets	$ 385,547	$ 295,940
Liabilities, Series A preferred shares and shareholders' equity		
Current liabilities:		
Accounts payable	$ 11,464	$ 13,089
Accrued expenses and other current liabilities	11,632	14,736
Current portion of deferred rent	—	115
Current portion of deferred revenue	97,964	100,945
Current portion of lease incentive obligation	—	1,156
Current portion of operating lease liability	3,024	—
Total current liabilities	124,084	130,041
Long-term liabilities:		
Deferred rent, net of current portion	—	5,132
Deferred revenue, net of current portion	60,483	68,156
Lease incentive obligation, net of current portion	—	9,247
Operating lease liability, net of current portion	30,985	—
Other liabilities	1,897	2,142
Total long-term liabilities	93,365	84,677
Total liabilities	$ 217,449	$ 214,718
Series A preferred shares, no par value; 3,901,348 shares issued and outstanding at June 30, 2019 and December 31, 2018	$ 7,874	$ 7,874
Shareholders' equity:		
Ordinary shares, no par value; 34,266,260 and 29,472,197 shares issued and outstanding at June 30, 2019 and December 31, 2018, respectively	$ 538,537	$ 375,148
Additional paid-in capital	47,270	37,768
Accumulated other comprehensive income	280	153
Accumulated deficit	(425,863)	(339,721)
Total shareholders' equity	$ 160,224	$ 73,348
Total liabilities, Series A preferred shares and shareholders' equity	$ 385,547	$ 295,940

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,	
	2019	2018	2019	2018
Revenue	$ 7,628	$ 4,879	$ 10,654	$ 6,301
Operating expenses:				
Research and development	41,605	32,547	81,718	61,743
General and administrative	11,640	8,905	22,541	16,906
Total operating expenses	53,245	41,452	104,259	78,649
Loss from operations	(45,617)	(36,573)	(93,605)	(72,348)
Other income, net:				
Dividend income	1,544	934	2,968	1,290
Interest income, net	8	4	19	11

Other income, net	2,123	(259)	4,476	84
Total other income, net	3,675	679	7,463	1,385
Loss before income taxes	(41,942)	(35,894)	(86,142)	(70,963)
Income tax provision	—	—	—	(172)
Net loss	$ (41,942)	$ (35,894)	$ (86,142)	$ (71,135)
Net loss per share attributable to ordinary shareholders—basic and diluted	$ (1.22)	$ (1.23)	$ (2.58)	$ (2.49)
Weighted-average ordinary shares used in computing net loss per share attributable to ordinary shareholders—basic and diluted	34,260,298	29,144,466	33,433,322	28,535,149
Other comprehensive income (loss):				
Net loss	$ (41,942)	$ (35,894)	$ (86,142)	$ (71,135)
Foreign currency translation	30	36	127	85
Comprehensive loss	$ (41,912)	$ (35,858)	$ (86,015)	$ (71,050)

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