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

November 5, 2019

Fast Track designation for suvodirsen received from the U.S. FDA

Interim analysis of dystrophin expression from suvodirsen open-label extension study expected in 4Q 2019

Topline data from PRECISION-HD2 clinical trial expected by year-end

Key hires and board expansion mark continued progress towards commercial preparedness in the U.S.

CAMBRIDGE, Mass., Nov. 05, 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 third quarter ended September 30, 2019 and provided a business update.

"We continued our strong execution in the third quarter and, as a result, we are on track to deliver key clinical data readouts in the fourth quarter from our open-label extension study of suvodirsen in Duchenne muscular dystrophy and from PRECISION-HD2, the first of our two Phase 1b/2a trials in Huntington's disease," said Paul Bolno, MD, MBA, President and Chief Executive Officer of Wave Life Sciences. "In anticipation of our potential launch of suvodirsen in the United States and future late-stage programs, we hired a Chief Commercial Officer with proven experience in neurology and rare disease and named three new Board members with deep expertise in clinical development, product commercialization and government and payor relations."

"As we prepare for our near-term milestones, we continue to advance our platform, PRISM, with new preclinical programs such as our SNP3 program in Huntington's disease and our lead ophthalmology program for Usher Syndrome Type 2A," continued Dr. Bolno. "In addition, we're very excited about the latest modality to emerge from PRISM, ADAR-mediated RNA editing, which we presented during our Analyst and Investor Research Day in early October."

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

Suvodirsen in patients with Duchenne muscular dystrophy amenable to exon 51 skipping

- Suvodirsen, an investigational compound, is currently being studied in an open-label extension (OLE) study and a Phase 2/3 study (as described below) in patients with Duchenne muscular dystrophy (DMD) with mutations amenable to exon 51 skipping. 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. Pending positive clinical dystrophin expression data, the company expects to file for an accelerated approval of suvodirsen in the United States in the second half of 2020.

- In September 2019, Wave announced that the U.S. Food and Drug Administration (FDA) has granted Fast Track designation to suvodirsen for the treatment of DMD patients with mutations amenable to exon 51 skipping. Fast Track designation is granted for product candidates that are intended for the treatment of serious or life-threatening disease or conditions, which demonstrate the potential to address an unmet medical need. The designation offers the opportunity for frequent interactions with the FDA to discuss the drug's development plan and ensure collection of appropriate data needed to support drug approval, as well as eligibility for rolling submission of a New Drug Application (NDA).

- Suvodirsen is also currently being studied in DYSTANCE 51, a global Phase 2/3, multicenter, randomized, double-blind, placebo-controlled clinical trial that will evaluate the efficacy and safety of suvodirsen in DMD patients with mutations amenable to exon 51 skipping. Patient enrollment in the DYSTANCE 51 trial began in the third quarter and 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 FDA for its Complex Innovative Trial Design (CID) pilot program, through which Wave will 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.

Additional exon skipping programs for patients with Duchenne muscular dystrophy

- 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, with the goal of delivering significant and meaningful levels of dystrophin.

Central nervous system (CNS) diseases

PRECISION-HD clinical program evaluating WVE-120101 and WVE-120102 in Huntington's disease

- 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).

- Topline clinical data from the four multi-dose cohorts of the PRECISION-HD2 trial are expected by the end of 2019. In October 2019, Wave initiated an open-label extension (OLE) study open to patients outside of the U.S. who participated in the Phase 1b/2a PRECISION-HD2 trial and patient dosing in the OLE is currently underway.

- Topline data from the four multi-dose cohorts of the PRECISION-HD1 trial are expected in early 2020. An OLE study open to patients outside the U.S. who participated in the Phase 1b/2a PRECISION-HD1 trial is expected to be initiated in 2020.

- PRECISION-HD1 and PRECISION-HD2 are evaluating investigational WVE-120101 and WVE-120102, respectively, which are stereopure 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.

Allele-selective approach to treating Huntington's disease

- Wave's HD pipeline includes clinical programs WVE-120101 and WVE-120102 and a third program, which is a preclinical-stage stereopure oligonucleotide designed to target an undisclosed SNP (SNP3). All of these compounds are designed to selectively target the mutant allele of the *huntingtin* (*HTT*) gene, while leaving the wild-type (wtHTT) relatively intact.

- The healthy or wild-type *HTT* transcript is required to produce healthy HTT protein which is important for neuronal function. At Wave's recent Analyst and Investor Research Day, key opinion leaders in HD research presented data suggesting that
  - wtHTT is neuroprotective in an adult brain;
  - transport of key neurotrophic factors such as brain-derived neurotrophic factor (BDNF) are regulated by wtHTT levels; and
  - HD may be caused by a dominant gain of function in mutant HTT *and* a loss of function of wtHTT protein.

- Wave's allele-selective approach may also enable the company to address the pre-manifest, or asymptomatic, HD patient population in the future.

- Also at Wave's recent Analyst and Investor Research Day, the company shared new preclinical data for its SNP3 program. SNP3 represents ~40% of the HD population and, with overlap, up to 80% of the HD population carries at least one of SNP1, SNP2, and/or SNP3. In patient-derived neurons, Wave's allele-selective SNP3 compounds demonstrated more potent knockdown of mutant *HTT in vitro* than a pan-silencing analog of an oligonucleotide currently in clinical development. In addition, Wave's SNP3 compounds demonstrated potent and durable knockdown of mutant *HTT in vivo* for up to 12 weeks.

CNS disease pipeline

- Wave is advancing its C9orf72 preclinical program to potentially treat amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD) and expects to initiate clinical development in the second half of 2020, pending the submission of clinical trial applications and approval to proceed. Wave's C9orf72 program preferentially targets the transcript containing the GGGGCC (G4C2) expansion in the *C9orf72* gene.

- The company is leveraging its 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 recently announced that its lead ophthalmology program will use stereopure oligonucleotides to promote *USH2A* exon 13 skipping to address Usher Syndrome Type 2A and presented a poster at the 15th Annual Meeting of the Oligonucleotide Therapeutics Society (OTS) titled "Stereopure Oligonucleotides that Promote USH2A Exon Skipping for the Treatment of Usher Syndrome Type 2A" on October 14, 2019. In the poster presentation, a stereopure oligonucleotide induced dose-dependent *USH2A* exon skipping that demonstrated enhanced potency over a stereorandom reference compound in Y79 cells and induced dose-dependent *USH2A* exon skipping in the nonhuman primate (NHP) retina and human retina *ex vivo*.

PRISM: next generation modalities

- At its Analyst and Investor Research Day in October 2019, Wave announced that it is leveraging its proprietary PRISM platform to design novel RNA-editing therapeutics. Wave's technology uses endogenous ADAR (adenosine deaminases acting on RNA) enzymes via non-viral, free uptake of RNA editing oligonucleotides in a variety of primary human cell types *in vitro* with high efficiencies and has potential to be a best-in-class RNA editing modality. Wave observed editing efficiencies of up to 70% in primary hepatocytes and approximately 50% in bronchial epithelial cells without the need for viral or lipid nanoparticle (LNP) delivery vehicles. Wave expects to share *in vivo* RNA editing data generated from ADAR in 2020.

Corporate

- In the third quarter, Wave made several key hires and appointments in anticipation of the company's potential first commercial launch. This expansion includes Mark Baldry, who was appointed Chief Commercial Officer and is responsible for building Wave's global commercial strategy and organization, including its sales, marketing and market access and reimbursement teams, as well as launch planning for suvodirsen. Several key hires were also made within the Medical Affairs organization, including the Vice President of Medical Affairs, as well as the global head of Wave's Medical Science Liaison organization.

- In September 2019, Wave appointed three new directors, Amy Pott, Heidi L. Wagner, JD, and Mark H. N. Corrigan, MD, to its Board of Directors. These new appointments deepen the Board's expertise in clinical development, product commercialization, and government and payor relations as the company advances its clinical and preclinical pipeline and further develops PRISM.

Third Quarter 2019 Financial Results and Financial Guidance

Wave reported a net loss of $50.7 million in the third quarter of 2019 as compared to $37.6 million in the same period in 2018. The increase in net loss in the third 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 $44.6 million in the third quarter of 2019 as compared to $32.9 million in the same period in 2018. The increase in research and development expenses in the third 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 $12.5 million in the third quarter of 2019 as compared to $9.8 million in the same period in 2018. The increase in general and administrative expenses in the third quarter of 2019 was mainly driven by continued organizational growth to support Wave's corporate goals.

As of September 30, 2019, Wave had $209.0 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 $136.9 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 potential commercial launch of our product candidates; 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; regulatory submissions; 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)

	September 30, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 209,009	$ 174,819
Current portion of accounts receivable	20,000	10,000
Prepaid expenses and other current assets	21,249	17,454
Total current assets	250,258	202,273
Long-term assets:		
Accounts receivable, net of current portion	30,000	50,000
Property and equipment, net	37,204	39,931
Operating lease right-of-use assets	18,527	—

Restricted cash	3,643	3,625
Other assets	7,580	111
Total long-term assets	96,954	93,667
Total assets	$ 347,212	$ 295,940
Liabilities, Series A preferred shares and shareholders' equity		
Current liabilities:		
Accounts payable	$ 20,219	$ 13,089
Accrued expenses and other current liabilities	13,738	14,736
Current portion of deferred rent	—	115
Current portion of deferred revenue	96,322	100,945
Current portion of lease incentive obligation	—	1,156
Current portion of operating lease liability	3,132	—
Total current liabilities	133,411	130,041
Long-term liabilities:		
Deferred rent, net of current portion	—	5,132
Deferred revenue, net of current portion	59,196	68,156
Lease incentive obligation, net of current portion	—	9,247
Operating lease liability, net of current portion	30,165	—
Other liabilities	1,793	2,142
Total long-term liabilities	$ 91,154	$ 84,677
Total liabilities	$ 224,565	$ 214,718
Series A preferred shares, no par value; 3,901,348 shares issued and outstanding at September 30, 2019 and December 31, 2018	$ 7,874	$ 7,874
Shareholders' equity:		
Ordinary shares, no par value; 34,284,217 and 29,472,197 shares issued and outstanding at September 30, 2019 and December 31, 2018, respectively	$ 538,790	$ 375,148
Additional paid-in capital	52,290	37,768
Accumulated other comprehensive income	282	153
Accumulated deficit	(476,589)	(339,721)
Total shareholders' equity	$ 114,773	$ 73,348
Total liabilities, Series A preferred shares and shareholders' equity	$ 347,212	$ 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 September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Revenue	$ 2,929	$ 4,493	$ 13,583	$ 10,794
Operating expenses:				
Research and development	44,585	32,876	126,303	94,619
General and administrative	12,523	9,849	35,064	26,755
Total operating expenses	57,108	42,725	161,367	121,374
Loss from operations	(54,179)	(38,232)	(147,784)	(110,580)
Other income, net:				
Dividend income	1,208	1,064	4,176	2,354
Interest income, net	6	5	25	16
Other income (expense), net	2,239	(468)	6,715	(384)
Total other income, net	3,453	601	10,916	1,986
Loss before income taxes	(50,726)	(37,631)	(136,868)	(108,594)
Income tax provision	—	—	—	(172)
Net loss	$ (50,726)	$ (37,631)	$ (136,868)	$ (108,766)
Net loss per share attributable to ordinary shareholders—basic and diluted	$ (1.48)	$ (1.28)	$ (4.06)	$ (3.78)

Weighted-average ordinary shares used in computing net loss per share attributable to ordinary shareholders—basic and diluted	34,281,203	29,333,994	33,719,055	28,804,357
Other comprehensive income (loss):				
Net loss	$ (50,726)	$ (37,631)	$ (136,868)	$ (108,766)
Foreign currency translation	2	(20)	129	65
Comprehensive loss	$ (50,724)	$ (37,651)	$ (136,739)	$ (108,701)

Investor Contact:
Kate Rausch
617-949-4827
krausch@wavelifesci.com

Media and Patient Contact:
José Juves
617-949-4708
jjuves@wavelifesci.com

Source: Wave Life Sciences