Wave Life Sciences Announces Upcoming Presentations at MDA Conference that Highlight Best-in-Class Potential for WVE-N531 in Duchenne Muscular Dystrophy

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Presentations include data for WVE-N531 that provide first clinical evidence of a potential therapeutic for DMD accessing satellite cells, which are important for potential muscle regeneration

Presentations also include non-human primate data demonstrating significant concentrations of WVE-N531 in heart, diaphragm and skeletal muscle, as well as preclinical data for potential future DMD programs targeting other exons

CAMBRIDGE, Mass., Feb. 27, 2024 (GLOBE NEWSWIRE) -- Wave Life Sciences Ltd. (Nasdaq: WVE), a clinical-stage biotechnology company focused on unlocking the broad potential of RNA medicines to transform human health, today announced its upcoming presentations at the 2024 Muscular Dystrophy Association (MDA) Clinical & Scientific Conference, taking place March 3-6 in Orlando, FL.

Wave's poster presentations will highlight the best-in-class potential of WVE-N531 in Duchenne muscular dystrophy (DMD), which is currently being evaluated in the Phase 2, potentially registrational FORWARD-53 study. The presentations will also illustrate the impact of Wave's novel PN chemistry on pharmacology of its exon skipping oligonucleotides. Highlights from the presentations include:

- Data from the Phase 1b/2 proof-of-concept (Part A) study of WVE-N531 in boys with DMD amenable to exon 53 skipping, which demonstrate uptake of WVE-N531 in satellite cells of all participants in the study. Satellite cells, or muscle stem cells, are important for muscle regeneration, and this is the first clinical evidence of satellite cell uptake for any investigational or approved DMD therapeutic.
- Preclinical data for WVE-N531 in non-human primates, which demonstrate that Wave's PN chemistry significantly enhanced drug concentrations in skeletal muscle, with even higher exposure in the heart and diaphragm. These data suggest that WVE-N531 muscle concentrations in the clinic may be higher in heart and diaphragm than in skeletal muscle. In the previous Phase 1b/2 Part A study, WVE-N531 demonstrated high skeletal muscle concentrations of 42 µg/g (42,000 ng/g) after three every-other-week doses, which translated to best-in-class exon skipping (mean of 53%).
- Preclinical data for Wave's exon skipping programs beyond exon 53, which reinforce the impact of PN chemistry for enabling high tissue concentrations, exon skipping and dystrophin restoration in preclinical models. Success with WVE-N531 would unlock a multiexon strategy where Wave can potentially address up to 40% of the DMD population with its current DMD pipeline, which includes discovery programs for skipping exons 51, 52, 44 and 45, in addition to exon 53 with WVE-N531.

"At Wave, we increasingly continue to regard exon skipping as the preferred mechanism for altering DMD disease progression in those amenable to this approach. Dystrophin is one of the largest proteins in the body, and the goal of exon skipping is to enable the body to restore its own, near full-length protein that retains integral elements of healthy dystrophin. However, the DMD field's ability to realize the potential of exon skipping therapeutics and clinically meaningful dystrophin levels has been limited by sub-optimal potency, distribution, and durability of the existing exon skippers," said Anne-Marie Li-Kwai Cheung, MChem, MTOPRA, RAPS, Chief Development Officer at Wave Life Sciences. "With our novel chemistry, we have markedly improved on the pharmacology of exon skipping oligonucleotides and have already demonstrated best-in-class muscle concentrations and exon skipping, and a 25-day half-life, in the clinic. Our optimism for WVE-N531 is further bolstered by our satellite cell data, which indicate a potential for WVE-N531 to repair damaged myofibers and generate new myofibers. These data distinguish WVE-N531 from all other DMD therapeutic approaches. We now are evaluating the ability of WVE-N531 to restore dystrophin in the ongoing Phase 2 FORWARD-53 study and look forward to sharing 24-week data in the third quarter of 2024."

Details on Wave's Presentations

Sunday, March 3, 2024

- **WVE-N531 with PN Backbone Modification Significantly Enhances Drug Concentrations in Heart, Diaphragm, and Skeletal Muscles in Non-human Primates** (Andrew Hart, Scientist II, Wave Life Sciences)
  Pre-Clinical Research Poster #S14
  6:00 PM – 8:00 PM ET

- **PN-containing Oligonucleotides Yield High Levels of Exon Skipping and Dystrophin Protein Restoration in Preclinical Models for DMD** (Abbie Maguire, Senior Scientist II, Wave Life Sciences)
  Pre-Clinical Research Poster #S10
  6:00 PM – 8:00 PM ET

Monday, March 4, 2024

- **First Clinical Evidence for Satellite Cell Targeting in DMD: Results from Part A of a Phase 1b/2 Study of WVE-N531**
  (Kuldeep Singh, Senior Director and Head of Pathology, Wave Life Sciences)
  Clinical Trials Poster #M168
  6:00 PM – 8:00 PM ET

About Wave Life Sciences

Wave Life Sciences (Nasdaq: WVE) is a biotechnology company focused on unlocking the broad potential of RNA medicines to transform human health. Wave's RNA medicines platform, PRISM ^{TM}, combines multiple modalities, chemistry innovation and deep insights in human genetics to deliver scientific breakthroughs that treat both rare and prevalent disorders. Its toolkit of RNA-targeting modalities includes editing, splicing, RNA interference and antisense silencing, providing Wave with unmatched capabilities for designing and sustainably delivering candidates that optimally address disease biology. Wave's diversified pipeline includes clinical programs in Duchenne muscular dystrophy, Alpha-1 antitrypsin deficiency and Huntington's disease, as well as a preclinical program in obesity. Driven by the calling to "Reimagine Possible", Wave is leading the charge toward a world in which human potential is no longer hindered by the burden of disease. Wave is headquartered in Cambridge, MA. For more information on Wave's science, pipeline and people, please visit www.wavelifesciences.com and follow Wave on X (formerly Twitter) and LinkedIn.

Forward-Looking Statements
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, the best-in-class potential of WVE-N531 in DMD; the potentially registrational nature of our Phase 2 FORWARD-53 study; the impact of our novel PN chemistry on the pharmacology of our exon skipping oligonucleotides; our expectations that high tissue concentrations and high exon skipping may result in high dystrophin restoration following a sufficient follow up period; our understanding of the anticipated therapeutic benefit of WVE-N531 for DMD over existing therapies; our understanding of the importance of satellite cells for muscle regeneration; and our expectation that WVE-N531 muscle concentrations in the clinic may be higher in heart and diaphragm than in skeletal muscle. The words "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "predict," "project," "potential," "continue," "target" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements in this press release are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release and actual results may differ materially from those indicated by these forward-looking statements as a result of these risks, uncertainties and important factors, including, without limitation, the risks and uncertainties described in the section entitled "Risk Factors" in Wave's most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission (SEC), as amended, and in other filings Wave makes with the SEC from time to time. Wave undertakes no obligation to update the information contained in this press release to reflect subsequently occurring events or circumstances.

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