Wave Life Sciences to Highlight Advancements from PRISM Platform at Upcoming Scientific Congresses

October 3, 2022

Six presentations and posters between OTS and ESGCT meetings will highlight Wave's oligonucleotide chemistry advancements as well as RNA editing and RNAi capabilities

First presentation in a scientific congress of preclinical data supporting WVE-006 as a potential best-in-class therapeutic approach in alpha-1 antitrypsin deficiency

CAMBRIDGE, Mass., Oct. 03, 2022 (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 it will highlight oligonucleotide chemistry advancements from the company's PRISM ^{TM} discovery and drug development platform at upcoming scientific conferences. The company will also highlight its A-to-I RNA base editing oligonucleotides (AIMers), including WVE-006 for alpha-1 antitrypsin deficiency (AATD), as well as its RNA interference (RNAi) capabilities. The scientific congresses include the 18th Annual Meeting of the Oligonucleotide Therapeutics Society (OTS), taking place October 2-5, 2022, and the European Society of Gene & Cell Therapy 29th Congress (ESGCT), taking place October 11-14, 2022.

"Wave continues to expand its genetic medicines toolkit of modalities and novel chemistries, enabling both the flexibility to optimally address disease biology, as well as the ability to fine-tune potency, durability of effect, and tissue distribution of our stereopure oligonucleotides. Our data at OTS and ESGCT are illustrative of both the evolution and the potential of Wave's science," said Chandra Vargeese, PhD, Chief Technology Officer and Head of Platform Discovery Sciences at Wave Life Sciences. "We are excited to share the preclinical data for WVE-006 – the most advanced program to harness an endogenous enzyme for editing – as well as how we are applying AIMers to upregulate gene expression. We also are highlighting our preclinical siRNA designed with PRISM chemistry, which demonstrates remarkably robust and durable RNA silencing *in vivo*. Underpinning all of these advancements is our next-generation PN backbone chemistry and the enhanced pharmacology enabled by control of stereochemistry."

18th Annual Meeting of the Oligonucleotide Therapeutics Society

Oral presentations

- **Tuesday, October 4 at 8:30 a.m. MDT**
  Phosphoryl-guanidine backbone chemistry: understanding its impact on stereopure oligonucleotides (Chandra Vargeese, PhD, Chief Technology Officer and Head of Platform Discovery Sciences at Wave Life Sciences)
  Session IV: Preclinical

- **Wednesday, October 5 at 10:00 a.m. MDT**
  RNA base editing for the treatment of Alpha-1 antitrypsin deficiency (Prashant Monian, PhD, Senior Scientist I at Wave Life Sciences)
  Session VI: Genome & RNA Editing

Posters

- **Monday, October 3 at 4:00 p.m. MDT**
  Stereopure oligonucleotides incorporating phosphoryl guanidine backbone increase durability of gene silencing by RNAi (Naoki Iwamoto, PhD, Senior Director, Oligo Chemistry and Biochemistry Research at Wave Life Sciences)
  Poster Session I (Poster #101)

- **Tuesday, October 4 at 4:30 p.m. MDT**
  Effect of stereochemistry and backbone chemistry on AIMer RNA editing efficiency (Jack Godfrey, PhD, Senior Scientist I at Wave Life Sciences)
  Poster Session II (Poster #52)

- **Tuesday, October 4 at 4:30 p.m. MDT**
  Synthesis of stereopure chimeric oligonucleotides containing PN and PS backbone: A systematic evaluation of chiral auxiliaries (Jayakanthan Kumarasamy, PhD, Principal Scientist, Medicinal Chemistry at Wave Life Sciences)
  Poster Session II (Poster #58)

European Society of Gene & Cell Therapy 29th Congress

- **Thursday, October 13 at 5:30 p.m. BST**
  Application of ADAR-mediated RNA editing to modulate protein-protein interactions (Ian Harding, PhD, Scientist II at Wave Life Sciences)
  Poster session II (poster #424)

Wave's scientific presentations and posters can be accessed after the conferences at the "Events & Publications" section of the company's Investor Relations website: ir.wavelifesciences.com.

About AIMers
Wave's AIMers are designed to correct mutations in an RNA transcript, thereby avoiding permanent changes to the genome that occur with DNA-targeting approaches. Rather than using an exogenous editing enzyme, AIMers recruit proteins that exist in the body, called ADAR enzymes, which naturally edit certain adenine (A) bases to inosine (I). Because I is read as G (guanine) by the cellular translational machinery, sequence-directed editing with ADAR has the potential to revert transcripts with single G-to-A point mutations that cause genetic diseases. This approach redirects a natural system for therapeutic purposes, enables simplified delivery without viral particles or liposomes, and avoids the risk of irreversible off-target effects of DNA-targeting approaches. AIMers are short in length, fully chemically modified, and use novel chemistry, including proprietary PN backbone modifications and chiral control, that make them distinct from other ADAR-mediated editing approaches.

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, including silencing, splicing, and editing. 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 machine learning-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 within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, our expectations for our GalNAc-conjugated A-to-I(G) RNA base editing oligonucleotides (AIMers) and the anticipated therapeutic benefits thereof; our expectations regarding the ability of our AIMers to address diseases of many different tissues and cell types; our research of unconjugated AIMers for delivery to organs that are not reachable by other editing approaches; the potential benefits of our AIMers compared with other RNA base editing approaches; and the potential benefits of PRISM, including our AIMers and our stereopure oligonucleotides. 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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