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Evaxion Biotech Presents Paper on Potential of Deep Data on Immune Complex Stability to Optimize Cancer Immunotherapy

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COPENHAGEN, Denmark, April 20, 2021 (GLOBE NEWSWIRE) -- Evaxion Biotech A/S (Nasdaq: EVAX) ("Evaxion" or the "Company"), a clinical-stage biotechnology company specializing in the development of AI-driven immunotherapies to improve the lives of patients with cancer, bacterial diseases and viral infections, announced today a presentation by Jens Kringelum, PhD, Evaxion's Director in Genomic Immuno-Oncology, at the 4th Neoantigen Summit Europe, being held virtually April 20-22, focusing on "AI in personalized cancer medicine". The presentation described Evaxion's recent improvement in determining cancer neoepitopes through measurement and prediction of peptide-MHC (pMHC) complex stability.

The work, previously reported in *Nature Communications, December 9, 2020,* outlines data on the thermostability of pMHC, the biological context for antigen processing. The paper explains how this method can be used to generate new data to train AI models for prediction of T-cell epitopes, and demonstrates how this appears to be a significant improvement over AI models trained on traditional mass spectrometry ligand data.

The data have already proved valuable in enabling Evaxion's artificial neural networks to more readily predict the immunological behavior of certain peptide epitopes.

Lars Wegner, CEO of Evaxion, said: "This exciting research is an important advancement in how we at Evaxion can train AI systems to make drug development more efficient. In particular, we believe the data indicates how the use of pMHC thermostability can be used to train an improved model for the prediction of peptide immunogenicity, specifically of cancer neoepitopes. This is particularly relevant for Evaxion's PIONEER ^{TM}, our proprietary AI platform for the rapid discovery and design of patient-specific neoepitopes used to derive immuno-oncology therapies."

PIONEER uses sophisticated algorithms to identify and select tumor-specific mutations that we believe are most likely to generate *a de novo* T-cell activation and anti-tumor immune response. These tumor-specific mutations, termed neoepitopes, are incorporated into patient-specific immunotherapies. Evaxion is continuously improving the performance of its PIONEER platform in selecting putative neoepitopes by modifying aspects of the underlying algorithms and through the development of novel methods for data generation.

Although the stability of pMHC is known to be important, current assays assess this interaction only for a single peptide at a time and in isolation and not in the context of natural antigen processing and presentation. We believe this new method provides a comprehensive and unbiased measure of pMHC stability for thousands of individual ligands detected simultaneously by mass spectrometry.

This allows rapid assessment of intra-allelic and inter-allelic differences in pMHC stability and shows profiles of stability that are broader than previously appreciated, facilitating the training of the new model. This assay can be applied to any cells bearing MHC or MHC-like molecules, offering insight into not only the endogenous immunopeptidome, but also that of neoepitopes and pathogen-derived sequences.

About Evaxion
Evaxion Biotech A/S is a clinical-stage AI-immunology™ platform company decoding the human immune system to discover and develop novel immunotherapies to treat cancer, bacterial diseases and viral infections. Evaxion has developed its AI-immunology core technology to deeply understand the biological processes relevant for engaging the immune system so the Company can harness its powers through novel immunotherapies. Evaxion's scalable AI-immunology core technology enables broad applicability across diseases with immunological components. With deep insights into the biological processes of the immune system, Evaxion bridges technology, engineering expertise and drug development know-how to bring novel immunotherapies to patients. Based on its proprietary and scalable AI-immunology core technology, Evaxion is developing a broad pipeline of novel product candidates which currently includes three patient-specific cancer immunotherapies, two of which are in Phase 1/2a clinical development. In addition, Evaxion is advancing a portfolio of vaccines to prevent bacterial and viral infections with one program currently in preclinical development against *S. aureus* (including Methicillin-resistant *S. aureus*) induced skin and soft tissue infections.

For more information

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