EVAXION

Evaxion Biotech announces publication in Nature Communications describing improved selection of immunotherapy targets

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Copenhagen, Denmark, December 9, 2020 – Evaxion Biotech A/S, a clinical-stage AI-immunology company developing immunotherapies to improve the lives of patients with cancer and infectious diseases, today announced the publication of an article in _Nature Communications_ showing how deep data on immune complex stability could optimize immunotherapy in cancer.

Evaxion has generated data on the thermostability of peptide-MHC complexes (pMHC), the biological context for antigen processing. The new data have already proved valuable in enabling Evaxion's artificial neural networks to more readily predict the immunological behavior of the peptide epitopes.

By surveying the thermostability of thousands of pMHC interactions simultaneously by mass spectrometry, the _Nature Communications_ paper provides an additional layer of previously unobtainable data on interactions within the pMHC. That data enabled Evaxion to train its unique AI platform to select epitopes for optimal immunogenicity, which may lead to better patient-specific cancer immunotherapies. Evaxion's work has been conducted in close collaboration with the leading academic research group of Professor Anthony Purcell at Monash University, Australia.

"My group has worked closely with Evaxion since 2016, to build on innovations in the identification of peptide ligands of MHC molecules using mass spectrometry, generate large databases of such peptides and to harness this information to improve prediction of peptide binding and immunogenicity using AI-based approaches. The thermostability assay is a great example of innovation in data generation and its application to the prediction of better targets for cancer immunotherapy," said Professor Anthony Purcell, Principal Research Fellow and Deputy Head (Research) of the Department of Biochemistry at Monash University, Melbourne, Australia.

Evaxion's immuno-oncology platform PIONEER™ uses sophisticated algorithms to identify and select tumor-specific mutations that the Company believes 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. The research published in _Nature Communications_ represents an important step in the journey towards improving the methodologies used to generate data that can be incorporated into the platform to further improve the identification and selection of neoepitopes.

"We now know that scanning peptide-MHC complexes for thermostability yields new data that we believe further improves our AI-based development of immunotherapies," said Lars Wegner, CEO of Evaxion. "These data add to our understanding of MHC-neoepitope interactions in cancer, one of the most intensively studied biological systems within the pharmaceutical arena, and we believe that such data are likely to be valuable in other areas, like infectious disease and autoimmunity."

Evaxion believes that this novel mass spectrometry-based approach can be applied to any cells bearing MHC or MHC-like molecules, thereby providing insights not only into normal immune balance but also into the stimulation and memory underlying new patient-specific immunotherapies for cancer treatments. Beyond cancer, similar data gathered from pathogen-derived sequences could also improve future responses to infectious epidemic threats.

About Evaxion

Evaxion Biotech A/S is an AI-immunology™ platform company decoding the human immune system to discover and develop novel, targeted immunotherapies to treat cancer and infectious diseases. Based on its proprietary and scalable AI-immunology core technology, Evaxion Biotech is developing a broad pipeline of novel assets which comprises three patient-specific cancer immunotherapies, two of which are in Phase 1/2 clinical development. In addition, the Company is advancing a portfolio of vaccines to treat bacterial and viral infections with one program currently in preclinical development against _S. aureus_ and skin and soft tissue infections (SSTI).

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