Seer Proteograph™ Provides Differentiated Insights into Spaceflight Proteomic Alterations for Precision Medicine and Biomarker Discovery

June 11, 2024

Secretome profiles from SpaceX Inspiration4 mission show alterations in oxidative stress, brain homeostasis, and coagulation

Creation of first-of-its-kind comprehensive atlas of molecular and physiological multiomic profiles available from multiple spaceflight missions

REDWOOD CITY, Calif., June 11, 2024 (GLOBE NEWSWIRE) -- Seer, Inc. (NASDAQ: SEER), a leading life sciences company commercializing a disruptive new platform for proteomics, today announced three publications highlighting studies led by Christopher Mason, Ph.D. that show how Seer's Proteograph Product Suite can uncover novel insights into plasma proteomic changes that occur during spaceflight. The studies further demonstrate the power of the Proteograph workflow to offer scientists a deeper understanding of physiological responses and biology that can advance the development of novel biomarkers and precision medicines across a wide range of research sectors.

Omid Farokhzad, M.D., Chair & Chief Executive Officer of Seer said, "Exploring the effects of space flight on the human body presents an intriguing frontier for proteomic research. These papers highlight Seer's technology to provide unbiased insights into the proteome and shed light on dysfunctional biological alterations. At Seer, we empower researchers in detecting proteins and peptides quickly and easily, pushing the boundaries of proteomics and genomics research."

Published in *Nature*, the first two manuscripts, "The Space Omics and Medical Atlas (SOMA): A comprehensive data resource and international biobank for astronauts," and "A second space age," highlight data and a sample repository for clinical, cellular, and multiomic profiles from multiple space missions, including SpaceX Inspiration4, Polaris Dawn, Axiom-2, NASA Twins Study, and JAXA Cell-Free RNA Study. The first-of-its-kind data resource, which includes plasma proteomic data generated from Seer's Proteograph workflow, offers the life sciences and aerospace communities information that could further be leveraged to study aerospace-associated physiological changes.

The third manuscript, "Secretome profiling captures acute changes in oxidative stress, brain homeostasis, and coagulation following short-duration spaceflight," was published in *Nature Communications*, describing a study led by Dr. Mason, along with Seer scientists. In the study, the researchers profiled the secretome (plasma proteome, metabolome, and extracellular vesicles and particles) from astronauts of the first all-civilian space flight mission, the SpaceX Inspiration4, using multiple methods, including proteomic profiling from plasma using Seer's Proteograph workflow. Additionally, the scientists evaluated brain-associated changes in spaceflight mice and changes in the blood-brain barrier.

While the authors reported acute changes in secretome profiles that recovered six months following the return to Earth, a majority of the plasma differentially abundant proteins were still altered six months after return. More specifically, the researchers noted significant alterations in proteins involved in coagulation and wound healing, antioxidation, and brain function.

Dr. Mason, lead author of the publications and member of the Seer Scientific Advisory Board, said, "Through our collaboration with Seer, we were able to pinpoint protein changes in plasma never before possible, spanning thousands of new protein metrics, which could offer new avenues of therapeutic and biomarker discovery. In the future, we can use this data to monitor additional physiological changes over time to then create focused and personalized countermeasures."

The study (which used an older version of the Seer Proteograph technology and mass spectrometer), identified a total of 23,164 peptides mapping to 2,992 unique protein groups (cutoff of 1% protein and peptide FDR), with an average of 2,104 proteins detected per sample. The three papers are part of a set of 44 space mission papers published in *Nature* journals today. These papers highlight the in-depth profiles from the missions, showcase the plans for upcoming missions to the moon and Mars, and provide additional information on the Proteograph data gathered.

Seer's recently launched Proteograph XT Assay Kit enables unbiased proteomics research at unprecedented speed, scale, and depth while maintaining high-resolution insights. Together with next generation mass spectrometers, the Proteograph XT workflow offers scientists the capability to detect over 60,000 peptides and over 8,000 proteins in a human plasma study. Seer's technology provides customers with unparalleled insights into drug response analysis, drug discovery, patient stratifications for clinical studies, and precision medicine.

About Seer

Seer is a life sciences company developing transformative products that open a new gateway to the proteome. Seer's Proteograph Product Suite is an integrated solution that includes proprietary engineered nanoparticles, consumables, automation instrumentation and software to perform deep, unbiased proteomic analysis at scale in a matter of hours. Seer designed the Proteograph workflow to be efficient and easy to use, leveraging widely adopted laboratory instrumentation to provide a decentralized solution that can be incorporated by nearly any lab. Seer's Proteograph Product Suite is for research use only and

is not intended for diagnostic procedures. For more information, please visit www.seer.bio.

Forward-Looking Statements

This press release contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Such forward-looking statements are based on Seer’s beliefs and assumptions and on information currently available to it on the date of this press release. Forward-looking statements may involve known and unknown risks, uncertainties and other factors that may cause Seer’s actual results, performance, or achievements to be materially different from those expressed or implied by the forward-looking statements. These statements include but are not limited to statements regarding the potential of Seer’s Proteograph to unveil novel unbiased insights into the proteome and proteomic changes, deeper understanding of physiological responses and biology including dysfunctional biological alterations, the effects of space flight on the human body, aerospace associated physiological changes, advance the development of therapeutic and biomarker discovery and precision medicines across a wide range of research sectors and new protein metrics, detecting proteins and peptides quickly and easily, the capability to detect large numbers of peptides and proteins, 60,000 and 8,000 respectively, in human plasma, provide unparalleled insights into drug response analysis, drug discovery, patient stratifications for clinical studies, and precision medicine, and pushing the speed, scale depth and boundaries of proteomics and genomics research. These and other risks are described more fully in Seer’s filings with the Securities and Exchange Commission (“SEC”) and other documents that Seer subsequently files with the SEC from time to time. Except to the extent required by law, Seer undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

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