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ProPhase Labs Unveils Project ZenQ-AI

Leveraging ProPhase Labs' AI platform, massive genomics database and patented esophageal cancer insights for Antibody Drug Conjugates development.

Garden City, NY, April 16, 2024 (GLOBE NEWSWIRE) -- ProPhase Labs, Inc. (NASDAQ: PRPH) ("ProPhase" or the "Company"), a biopharma, genomics, and diagnostics Company, today announced an innovative step forward in cancer treatment research with the introduction of Project ZenQ-AI. This project employs the Company's state-of-the-art AI platform which was meticulously developed with leading AI technology platforms and systems. The Company is harnessing its extensive genomic database—built over the last six years from whole genome sequencing tests (WGS) spanning more than 130 countries, and equivalent to roughly 150 million ancestry SNP-based tests. Whole Genome Sequencing (WGS) offers an exhaustive exploration of an individual's entire DNA, capturing all three billion base pairs for a complete and detailed genetic blueprint. This comprehensive approach contrasts sharply with SNP tests, which target specific genetic variations at known locations, typically analyzing between 100,000 to 1 million specific points. With WGS providing up to 30,000 times more genetic data than SNP testing, our service delivers unparalleled precision in personalized medicine and genetic research, far beyond the scope of standard SNP testing. Along with the data gathered from the Company's BE-Smart Test for esophageal adenocarcinoma (EAC), the platform is being utilized to create algorithms that identify possible antibody drug conjugate (ADC) candidates for new cancer therapeutics.

Antibody drug conjugates (ADCs) are specialized treatments that differ from traditional chemotherapy by specifically targeting cancer cells. ADCs use a linker to attach chemotherapy agents to a monoclonal antibody, which then binds to a unique marker found on the surface of cancer cells. This targeted approach helps to minimize damage to healthy cells and other side effects. ADCs represent a potent class of cancer therapies, blending the specificity of monoclonal antibodies with cytotoxic drugs. Leveraging ZenQ-AI with both genomic and proteomic data is believed to enable the rapid identification of biomarkers and mutations driving cancer, streamlining the design of ADCs for precise targeting. This integration promises more effective and personalized treatments, though rigorous experimental validation remains crucial for ensuring safety and efficacy of new therapeutic candidates.

"The power of Project ZenQ-AI not only stems from cutting-edge AI technology, but also the vast and growing genomic database that we've curated and continue to grow," explained Ted Karkus, CEO at ProPhase Labs. "This unique combination of sophisticated AI and rich, diverse genomic and proteomic data sources enhances our approach to cancer treatment as both innovative and effective."

Decoding the Genomic Advantage: WGS over Ancestry SNP-Based Tests

Central to Project ZenQ-AI's innovative approach is the utilization of whole genome sequencing, and its comprehensive method of examining all 3 billion base pairs of the

human genome. This provides a much greater advantage in exploring genomic changes than ancestry SNP-based tests, which only look at mutations in specific points in the genome. WGS provides more of a complete picture, offering in-depth insights into genetic factors influencing diseases and treatment responses.

Leveraging Advanced Technologies for Enhanced Capabilities

To support the computational demands of Project ZenQ-AI, ProPhase Labs is utilizing a dual-approach in technology. “We are leveraging cutting-edge AI and machine learning capabilities from major cloud providers, which allows us to scale our computational resources flexibly and efficiently,” explained Sergio Miralles, CIO at ProPhase. “Additionally, we harness the power of on-premises NVIDIA hardware, which is crucial for running the intensive cycles required by our proprietary algorithms. This hybrid infrastructure not only enhances our processing capabilities but also ensures that our data handling meets the highest standards of security and compliance required in medical research.”

BE-Smart: Six Years in the Making

The BE-Smart initiative, now integrated into Project ZenQ-AI, has been in development for over six years. It focuses on harnessing a detailed and patented proteomic database to better understand EAC and its early detection. EAC is one of the deadliest cancers and currently has no effective targeted treatment options. Currently, roughly 80-90% of those diagnosed ultimately lose their battle to EAC. “Our research has yielded several patented protein targets that have not been previously explored by the medical community,” stated Igor Ban, PhD, the director of Research and Development at ProPhase. “It has already been tested by an independent test lab, mProbe, Inc. on over 300 human samples, and the initial data appears to demonstrate exceptional accuracy in detecting early stage EAC.” The Company plans to pursue initial commercialization of the BE-Smart esophageal cancer diagnostic test in the second half of 2024.

Nebula Genomics: A Global Perspective

The global diversity of Nebula’s data base greatly enriches the value of the data and enhances Project ZenQ-AI's development of algorithms, thereby allowing the identification of unique genetic markers and therapeutic targets across diverse populations and enhancing the breadth and effectiveness of ADC treatments. The Company believes that Project ZenQ-AI represents the forefront of AI-driven research in ADC development. By combining the extensive WGS database of Nebula Genomics with the specialized insights from the BE-Smart Cancer Test, the Company believes that Project ZenQ-AI is set to invigorate the field of identification of novel, actionable targets for cancer therapies.

Beyond EAC: The Future of Oncology

While initially focusing on early diagnosis of EAC, the implications of Project ZenQ-AI extend far beyond. The platform sets a new milestone for ProPhase, offering the promise of more effective, and less toxic cancer treatments across a variety of cancer types.

"This initiative represents an important advancement for our Company, as it integrates the extensive development and expertise of our subsidiaries, Nebula Genomics and ProPhase BioPharma, to lead breakthroughs in precision oncology," added Mr. Karkus. " We believe

that our BE-Smart test for esophageal cancer is revolutionary in early diagnosis. Further enhancing our capabilities, our Company is advancing an AI platform that will utilize these proprietary esophageal cancer discoveries in conjunction with our extensive genomic database. The effectiveness of any AI system hinges on the quality of data it receives and analyzes. Our robust and proprietary genomic and proteomic databases are well-established, and the cost of analyzing this data through our AI platform is remarkably low. Our strategy involves out-licensing potential discoveries from our ZenQ-AI initiative to major pharmaceutical companies, which presents a cost-effective model that offers our shareholders a low-risk, high-reward opportunity."

Join Us on the Journey

ProPhase Labs invites collaboration from across the scientific and medical communities to join in this groundbreaking initiative. Together, with Project ZenQ-AI, we stand on the brink of transforming cancer treatment through the power of AI and genomic insights.

About ProPhase Labs

ProPhase Labs, Inc. (NASDAQ: PRPH) is revolutionizing healthcare through innovative solutions in biopharma, genomics, diagnostics, and therapeutics. With a commitment to advancing personalized medicine and improving patient care, ProPhase Labs is at the forefront of technological advancements in the healthcare industry. For more information, visit www.ProPhaseLabs.com

Forward-Looking Statements

Except for the historical information contained herein, this document contains forward looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding our strategy, plans, objectives and initiatives, including our plans to grow our subsidiaries and build a multi-billion dollar company, our expected timeline for commercializing our BE-Smart Test and its market potential and our belief in Project ZenQ-AI's potential to contribute to the identification of novel, actionable targets for cancer therapies. Management believes that these forward-looking statements are reasonable as and when made. However, such forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those projected in the forward-looking statements. These risks and uncertainties include but are not limited to our ability to obtain and maintain necessary regulatory approvals, general economic conditions, consumer demand for our products and services, challenges relating to entering into and growing new business lines, the competitive environment, and the risk factors listed from time to time in our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and any other SEC filings. The Company undertakes no obligation to update forward-looking statements except as required by applicable securities laws. Readers are cautioned that forward-looking statements are not guarantees of future performance and are cautioned not to place undue reliance on any forward-looking statements.

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