

NETRAMARK'S AI-BASED CLINICAL SOLUTION IDENTIFIES PARKINSON'S DISEASE SUBTYPES LINKED BY MITOCHONDRIAL, MICROBIOME AND IMMUNE SIGNALING

— Novel machine learning (ML) approach identifies genetic drivers within specific Parkinson's disease (PD) patient subpopulations and uncovers pivotal disease pathways, enhancing understanding of disease and treatment strategies —

— Data presented at the International Conference on Alzheimer's and Parkinson's Diseases and related neurological disorders (AD/PD™ 2024) —

TORONTO, March 11, 2024 /CNW/ - **NetraMark Holdings Inc. (the "Company" or "NetraMark")** (CSE: AIAI) (OTCQB: AINMF) (Frankfurt: 8TV) a generative AI software leader in clinical trial analytics, announces the presentation of new data demonstrating the ability of its proprietary NetraAI clinical trial solution to untangle the intricate web of factors contributing to PD, offering insights applicable to other neurodegenerative disorders, including AD. Application of NetraAI to a dataset of 588 individuals provided by the Michael J. Fox Foundation identified multiple markers associated with PD pathogenesis, including several that are closely linked to the immune system and immune responses. The data was presented in a poster at AD/PD™ 2024, which took place March 5-9 in Lisbon, Portugal.

"The results of this analysis not only advance our understanding of PD but also offer a scientific foundation for future investigations into the role of immune-related factors in neurodegenerative disorders. They also provide new opportunities for improving clinical trials through patient enrichment," said Dr. Joseph Geraci, PhD, Founder and Chief Scientific Officer of NetraMark. "Our unique approach opens new avenues for the diagnosis and treatment of PD, and has tremendous potential to accelerate development of urgently needed therapies for PD and other debilitating neurological conditions."

The poster, titled "

[Using NetraAI to Discover Parkinson's Disease Subtypes: Generative AI Reveals Transcriptomic Personas Linking Mitochondrial, Microbiome, and Immune Signaling](#)," reports the results of an analysis in which NetraAI was used to identify genetic drivers within specific PD patient subpopulations and uncover pivotal disease pathways. A transcriptomic data set assembled from 397 patients with PD and 191 controls was analyzed using NetraMark's AttractorAI algorithms to identify variables (called hypotheses) explaining specific subpopulations within the data set. Transcriptomic data comprises RNA transcripts and reflects which genes are expressed in each subpopulation.

Each Netra-Perspective within this analysis divides the patient population into explainable and unexplainable subsets of patients according to a set of variables and is designed to capture different aspects of complex diseases like PD. Combining different NetraPerspectives provides a holistic view of the patient population, and integration of the various hypotheses reveals significant variables and pathways linked to PD. Key findings from this analysis include:

- One Netra-Perspective identified two unexplainable and three explainable subpopulations using defined criteria and the statistical significance of the variables.
 - Within the explainable subpopulations, NetraAI identified an increased number of RNA transcripts for GPATCH2L (which is involved in metabolism of macromolecules), Rbbp (which regulates transcription), and EphA1 (which improves inflammatory responses and neuropathological changes in a model of PD).
 - Evaluation of these genes in a protein-protein interaction network further identified links to two proteins that are closely linked to immune-mediated functions: CLECB1 (which regulates cytotoxicity and cytokine secretion), and IRAK3 (a negative regulatory marker of inflammation).
- A different Netra-Perspective strongly implicated the gene BPI (upregulated in PD), which is involved in protecting against gram-negative bacteria.
- These variables are primarily associated with immune signaling, particularly the innate immune system's response to microbial pathogens, which may involve interactions with the microbiome.
- Other Netra-Perspectives identified more of a mitochondrial and microbiome role.
 - These findings lead to the hypothesis that BPI is overexpressed in some PD patients as a protective immune response to gut microbiome abnormalities that impact brain health.

"These findings add to the growing body of data demonstrating the power of the AttractorAI technologies on which NetraAI is based to identify the variables and provide hypotheses that explain specific patient subpopulations, even in highly complex neurological and psychiatric diseases," added Dr. Geraci.

In February 2024, NetraMark [reported data](#) at the International Society for CNS Clinical Trials and Methodology (ISCTM) 20th Annual Meeting demonstrating the potential of NetraAI to enable more efficient clinical development of therapies to treat a variety of mental health disorders, including bipolar disorder, anxiety and schizophrenia.

About NetraAI

In contrast with other AI-based methods, NetraAI is uniquely engineered to include focus mechanisms that separate small datasets into explainable and unexplainable subsets. Unexplainable subsets are collections of patients that can lead to suboptimal overfit models and inaccurate insights due to poor correlations with the variables involved. The NetraAI uses the explainable subsets to derive insights and hypotheses (including factors that influence treatment and placebo responses, as well as adverse events) that can significantly increase the chances of a clinical trial success. Other AI methods lack these focus mechanisms and assign every patient to a class, even when this leads to "overfitting" which drowns out critical information that could have been used to improve a trial's chance of success.

About NetraMark

NetraMark is a company focused on being a leader in the development of Generative Artificial Intelligence (Gen AI)/Machine Learning (ML) solutions targeted at the Pharmaceutical industry. Its product offering uses a novel topology-based algorithm that has the ability to parse patient data sets into subsets of people that are strongly related according to several variables simultaneously. This allows NetraMark to use a variety of ML methods, depending on the character and size of the data, to transform the data into powerfully intelligent data that activates traditional AI/ML methods. The result is that NetraMark can work with much smaller datasets and accurately segment diseases into different types, as well as accurately classify patients for sensitivity to drugs and/or efficacy of treatment.

For further details on the Company please see the Company's publicly available documents filed on the System for Electronic Document Analysis and Retrieval (SEDAR).

Forward-Looking Statements

This press release contains "forward-looking information" within the meaning of applicable Canadian securities legislation including statements regarding the potential improvements and success arising from NetraAI and the Company's position to empower pharmaceutical companies, provide them with critical insights and the possible improvement of patient outcomes and operational results, which are based upon NetraMark's current internal expectations, estimates, projections, assumptions and beliefs, and views of future events. Forward-looking information can be identified by the use of forward-looking terminology such as "expect", "likely", "may", "will", "should", "intend", "anticipate", "potential", "proposed", "estimate" and other similar words, including negative and grammatical variations thereof, or statements that certain events or conditions "may", "would" or "will" happen, or by discussions of strategy. Forward-looking information includes estimates, plans, expectations, opinions, forecasts, projections, targets, guidance, or other statements that are not statements of fact. The forward-looking statements are expectations only and are subject to known and unknown risks, uncertainties and other important factors that could cause actual results of the Company or industry results to differ materially from future results, performance or achievements. Any forward-looking information speaks only as of the date on which it is made, and, except as required by law, NetraMark does not undertake any obligation to update or revise any forward-looking information, whether as

a result of new information, future events, or otherwise. New factors emerge from time to time, and it is not possible for NetraMark to predict all such factors.

When considering these forward-looking statements, readers should keep in mind the risk factors and other cautionary statements as set out in the materials we file with applicable Canadian securities regulatory authorities on SEDAR at www.sedarplus.ca including our Management's Discussion and Analysis for the year ended September 30, 2023. These risk factors and other factors could cause actual events or results to differ materially from those described in any forward-looking information.

The CSE does not accept responsibility for the adequacy or accuracy of this release.

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