ZyVersa Therapeutics Announces Published Data Showing Inflammasome ASC Inhibitor IC 100 Decreases Microglial Inflammasome Activation and Alpha-Synuclein That Contribute to Neurodegeneration in Parkinson's Disease

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- Study supported by the Michael J. Fox Foundation through a grant awarded to ZyVersa and leading inflammasome experts at University of Miami Miller School of Medicine who conducted the study.
- Parkinson's Disease (PD) affects over 10 million people globally and is driven by inflammation leading to progressive neurodegeneration resulting in impaired mobility, cognitive decline, and other neurological symptoms.
- Abnormal alpha-synuclein accumulation/aggregation and inflammasome activation are key contributors to PD progression; targeting both may help slow or halt disease advancement.
- Current PD treatments address only symptoms—not the underlying disease; the global PD drug market was valued at $6.6 billion in 2024 and is projected to reach $13.3 billion by 2034 (Precedence Research).

WESTON, Fla., April 29, 2025 (GLOBE NEWSWIRE) -- ZyVersa Therapeutics, Inc. (Nasdaq: ZVSA, or "ZyVersa"), a clinical stage specialty biopharmaceutical company developing first-in-class drugs for treatment of inflammatory and renal diseases, announces newly published data supporting the potential of its Inflammasome ASC Inhibitor IC 100 to slow the progression of Parkinson's disease.

Published in npj Parkinson's Disease, a peer-reviewed journal from Nature, the study presents groundbreaking findings from researchers at the University of Miami Miller School of Medicine. The research demonstrates that IC 100 blocks microglial inflammasome activation and reduces neurotoxic alpha-synuclein accumulation—both key contributors to PD progression.

"These are the first data to link ASC speck assembly, NLRP1 inflammasome activation, and alpha-synuclein aggregation in neurons of Parkinson's disease patients," said Stephen C. Glover, ZyVersa's Co-founder, Chairman, CEO and President. "IC 100, which unlike NLRP3 inhibitors, targets ASC, ASC specks, and multiple types of inflammasomes, blocked microglial NLRP1 inflammasome activation and reduced alpha-synuclein accumulation. These results strengthen our belief in IC 100 as a potential disease-modifying therapy for Parkinson's, and we're preparing to initiate proof-of-concept studies in animal models later this year."

Study Highlights

- ASC and NLRP1 were present in the core of alpha-synuclein in neuronal Lewy bodies of PD patients, suggesting inflammasomes, ASC specks, and other aggregated proteins, including alpha-synuclein, exacerbate neurodegeneration in PD.
- Granular neuron loss was observed in PD patient tissues, highlighting the need for interventions that can mitigate neurodegeneration.
- ASC specks from PD patient brains triggered inflammasome activation and cell death in human microglia. This was blocked by IC 100.
- Preformed alpha-synuclein fibrils from brains of PD patients significantly increased total and phosphorylated alpha-synuclein and ASC specks in microglia, triggering inflammasome activation that was inhibited by IC 100.
- IC 100 altered the cellular distribution and decreased levels of phosphorylated alpha-synuclein, indicating improved clearance of pathogenic alphaαα-synuclein.

"Our findings demonstrate that targeting inflammasomes and ASC specks may be a promising approach not only for PD but also for Lewy body dementia (LBD) and Alzheimer's Disease," said Dr. Robert W. Keane, Professor of Physiology and Biophysics, Neurological Surgery, and Microbiology & Immunology at the University of Miami, and lead author of the study. "IC 100's mechanism, which uniquely inhibits both ASC speck activity and misfolded protein aggregates, makes it a strong candidate for treating neurodegenerative diseases."

About Inflammasome ASC Inhibitor IC 100

IC 100 is a novel humanized IgG4 monoclonal antibody that inhibits the inflammasome adaptor protein ASC. IC 100 was designed to attenuate both initiation and perpetuation of the inflammatory response. It does so by binding to a specific region of the ASC component of multiple types of inflammasomes, including NLRP1, NLRP2, NLRP3, NLRC4, AIM2, and Pyrin. Intracellularly, IC 100 binds to ASC monomers, inhibiting inflammasome formation, thereby blocking activation of IL-1β early in the inflammatory cascade. IC 100 also binds to ASC in ASC Specks, both intracellularly and extracellularly, further blocking activation of IL-1β and the perpetuation of the inflammatory response that is pathogenic in inflammatory diseases. Because active cytokines amplify adaptive immunity through various mechanisms, IC 100, by attenuating cytokine activation, also attenuates the adaptive immune response. The lead indication for IC 100 is obesity with certain metabolic complications. To review a white paper summarizing the mechanism of action and preclinical data for IC 100, Click Here.

About ZyVersa Therapeutics, Inc.

ZyVersa (Nasdaq: ZVSA) is a clinical stage specialty biopharmaceutical company leveraging advanced proprietary technologies to develop first-in-class drugs for patients with inflammatory or kidney diseases with high unmet medical needs. We are well positioned in the rapidly emerging inflammasome space with a highly differentiated monoclonal antibody, Inflammasome ASC Inhibitor IC 100, and in kidney disease with phase 2 Cholesterol Efflux Mediator™ VAR 200. The lead indication for IC 100 is obesity and its associated metabolic complications, and for VAR 200, focal segmental glomerulosclerosis (FSGS). Each therapeutic area offers a "pipeline within a product," with potential for numerous indications. The total accessible market is over $100 billion. For more information, please visit www.zyversa.com.

Cautionary Statement Regarding Forward-Looking Statements

Certain statements contained in this press release regarding matters that are not historical facts, are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. These include statements regarding management's intentions, plans, beliefs, expectations, or forecasts for the future, and, therefore, you are cautioned not to place undue reliance on them. No forward-looking statement can be guaranteed, and actual results may differ materially from those projected. ZyVersa Therapeutics, Inc ("ZyVersa") uses words such as "anticipates," "believes," "plans," "expects," "projects," "future," "intends," "may," "will," "should," "could," "estimates," "predicts," "potential," "continue," "guidance," and similar expressions to identify these forward-looking statements that are intended to be covered by the safe-harbor provisions. Such forward-looking statements are based on ZyVersa's expectations and involve risks and uncertainties; consequently, actual results may differ materially from those expressed or implied in the statements due to a number of factors, including ZyVersa's plans to develop and commercialize its product candidates, the timing of initiation of ZyVersa's planned preclinical and clinical trials; the timing of the availability of data from ZyVersa's preclinical and clinical trials; the timing of any planned investigational new drug application or new drug application; ZyVersa's plans to research, develop, and commercialize its current and future product candidates; the clinical utility, potential benefits and market acceptance of ZyVersa's product candidates; ZyVersa's commercialization, marketing and manufacturing capabilities and strategy; ZyVersa's ability to protect its intellectual property position; and ZyVersa's estimates regarding future revenue, expenses, capital requirements and need for additional financing.

New factors emerge from time-to-time, and it is not possible for ZyVersa to predict all such factors, nor can ZyVersa assess the impact of each such factor on the business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Forward-looking statements included in this press release are based on information available to ZyVersa as of the date of this press release. ZyVersa disclaims any obligation to update such forward-looking statements to reflect events or circumstances after the date of this press release, except as required by applicable law.

This press release does not constitute an offer to sell, or the solicitation of an offer to buy, any securities.

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