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PharmaNest and Mediar Therapeutics Collaborate to Quantify ECM and Fibrosis Remodeling in the EncompaSSc Phase 2 Trial of MTX-474 in Diffuse Cutaneous Systemic Sclerosis

Companies to use AI-enabled digital pathology and spatial single-fiber analysis to characterize the mechanistic effects of MTX-474 in systemic sclerosis

PRINCETON, NJ / [ACCESS Newswire](#) / September 30, 2026 / PharmaNest, Inc. an AI-enabled digital pathology company specializing in the quantitative and spatial characterization of fibrosis and Mediar Therapeutics, Inc., a clinical-stage biotechnology company pioneering first-in-class therapies to halt and reverse fibrosis, today announced a collaboration to integrate advanced digital pathology into Mediar's ongoing EncompaSSc Phase 2 clinical trial of MTX-474 in patients with diffuse cutaneous systemic sclerosis (dcSSc).

MTX-474 is a first-in-class human IgG1 monoclonal antibody designed to neutralize EphrinB2 signaling, a pathway implicated in myofibroblast activation, extracellular matrix (ECM) deposition and tissue remodeling known to drive fibrosis in SSs. The randomized, double-blind, placebo-controlled EncompaSSc Phase 2 study is evaluating the safety and efficacy of MTX-474 in patients with dcSSc.

Under the collaboration, PharmaNest will apply its FibroNest™ AI-enabled digital pathology platforms to skin biopsies collected during the EncompaSSc study. Spatial single-fiber analysis will quantify hundreds of fibrosis and ECM characteristics spatially and at the individual collagen-fiber level and evaluate how these features and associated fibrotypes change following treatment with MTX-474.

The primary efficacy endpoint of the EncompaSSc study is mean change from baseline to week 24 in modified Rodnan Skin Score (mRSS), which provides an established clinical assessment of skin stiffness in people with SSs. PharmaNest's digital pathology approach is designed to complement these clinical and molecular endpoints by providing quantitative spatial measures of fibrosis remodeling and potentially revealing tissue-level mechanisms associated with therapeutic response.

"MTX-474 was designed to intervene directly in biological pathways responsible for myofibroblast activation and pathological tissue remodeling, key contributors to fibrosis onset and progression in SSs," said **Rahul Ballal, Ph.D., Chief Executive Officer of Mediar Therapeutics**. "The ability to quantitatively characterize changes in the extracellular matrix and fibrosis architecture within patient biopsies provides an exciting opportunity to deepen our understanding of the biological effects of MTX-474 in the EncompaSSc study."

"Systemic sclerosis is fundamentally a disease of pathological extracellular matrix remodeling, yet conventional clinical and histological assessments provide limited information about how that matrix changes during treatment," said **Helene Petitjean, MD, CMO at PharmaNest**. "By resolving fibrosis at the spatial single-fiber level, we aim to identify treatment-associated changes in collagen organization and fibrotypes and connect these tissue phenotypes with molecular and clinical responses. This collaboration illustrates how digital pathology can move beyond fibrosis quantification toward mechanistic understanding of therapeutic response."

About the EncompaSSc Phase 2 Study

EncompaSSc is a randomized, double-blind, placebo-controlled Phase 2 study evaluating MTX-474 in participants with diffuse cutaneous systemic sclerosis. Participants receive MTX-474 or placebo via intravenous infusion every four weeks over a 24-week period. The primary efficacy endpoint is change from baseline in mRSS at Week 24. The study also incorporates skin biopsies, molecular and transcriptomic analyses, serum biomarkers, imaging and other clinical assessments to characterize treatment response. The EncompaSSc Phase 2 study is open and enrolling (NCT07287670). More information can be found at www.encompasstrial.com.

About MTX-474

MTX-474 is a first-in-class human IgG1 antibody designed to neutralize the EphrinB2 signaling that causes the onset and progression of fibrosis. Ephrin ligands and Eph receptors mediate biological processes involved in tissue fibrosis including cell migration, myofibroblast activation, and tissue remodeling. A growing body of evidence has implicated EphrinB2 in the fibrosis of the skin, lungs, and heart. Expression of EphrinB2 and its receptors is measurable in human blood and correlates with disease severity. A Phase 1 study was recently completed and a Phase 2 clinical study in patients with systemic sclerosis is now open (NCT07287670).

About Mediar Therapeutics

[Mediar Therapeutics](#) is pioneering a new approach to fibrosis treatment that halts the disease at a different source - the myofibroblast, the key pathogenic cell in fibrosis that drives scarring, disease progression, and ultimately organ failure. Mediar was founded based on a deep understanding of the complex science underlying fibrosis onset and progression. By combining novel targets with reliable, easily detectable blood biomarkers and familiar modalities, Mediar is derisking the path forward for fibrosis therapies in clinical development. For more information, contact info@mediartx.com or follow us on [LinkedIn](#).

About PharmaNest

PharmaNest is an AI-enabled digital pathology company pioneering the quantitative and spatial characterization of fibrosis and tissue remodeling. Its FibroNest™ and FibroMAP™ platforms combine spatial single-fiber analysis, AI-powered pathomics and pathologic fusion to generate novel fibrosis biomarkers and mechanistic insights into disease progression and therapeutic response. PharmaNest supports the discovery and development of anti-fibrotic therapies and related diagnostics.

For more information, visit www.pharmanest.com.