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# FibroBiologics Reports Preclinical Data Showing Fibroblast Spheroids May Actively Reprogram the Burn Wound Environment to Drive Healing and Reduce Scarring

HOUSTON, May 04, 2026 (GLOBE NEWSWIRE) -- FibroBiologics, Inc. (Nasdaq: FBLG) ("FibroBiologics"), a clinical-stage biotechnology company with 270+ patents issued and pending with a focus on the development of therapeutics and potential cures for chronic diseases using fibroblasts and fibroblast-derived materials, today announced compelling preclinical results suggesting that topical treatment with human dermal fibroblast (HDF) spheroids may reprogram the burn wound environment by dampening harmful inflammation, reshaping immune cell behavior, and reducing markers of scar-forming activity, within just eight days of injury.

In the study, daily treatments with HDF spheroids per wound were initiated two hours after burn injury and continued for eight consecutive days. Control animals received vehicle treatment only. The speed and breadth of the biological response observed was significant: by day 8, treated burn wounds appeared visibly less inflamed, with the prominent red inflammatory border characteristic of control mice absent in fibroblast spheroid-treated animals. This effect held across multiple mouse strains and in both male and female animals, illustrating the robustness of the response.

The data extended beyond the immune response. Analytical analysis of biomarkers involved in scar tissue development showed a decreasing trend in the expression of genes governing collagen synthesis (*Col1a1, Col3a1*), ECM turnover (*Mmp1a*, *Mmp8*), and myofibroblast activation (*Acta2*). These trends suggest that HDF spheroid treatment may be reducing the molecular processes that drive excessive scarring, and offering the prospect of wounds that heal more cleanly, with less permanent tissue remodeling.

Additional analysis of the HDF spheroids treated tissue samples showed an approximately 3-fold decrease in expression of the pro-inflammatory marker IL1B and a 4-fold increase in expression of the anti-inflammatory cytokine IL10 compared to controls ($p<0.01$ for both). An upward trend in Arg1 expression, a hallmark of M2 macrophage polarization, suggests the treatment may be actively redirecting immune cells away from a destructive inflammatory program and toward one that supports tissue resolution and repair.

Hamid Khoja, Ph.D., Chief Scientific Officer, commented, “These results are scientifically significant on multiple levels. We are not simply observing a reduction in inflammation, we are seeing evidence that fibroblast spheroids may be orchestrating a fundamental shift in the wound’s immunological programming. The cytokine data, combined with the macrophage

polarization signals and the ECM marker profile, paint a coherent picture of biology moving in the right direction. This is exactly the kind of mechanistic evidence we need to advance this platform with confidence."

"Burn wounds represent one of the most challenging and underserved areas in wound care, where patients face not only the acute trauma of the injury, but a lifetime of scarring and functional impairment," said Pete O'Heeron, Founder & Chief Executive Officer. "These preclinical results are an important validation of our strategy to broaden the FibroBiologics wound care platform beyond our core indications. Fibroblasts play an essential role in wound healing, and what we are seeing here suggests they may be uniquely positioned to address the pathological inflammation and scarring that define burn injuries. We look forward to building on this data as we expand our wound care platform to include burn injuries."

**About FibroBiologics**

Based in Houston, FibroBiologics is a clinical-stage biotechnology company developing a pipeline of treatments and seeking potential cures for chronic diseases using fibroblast cells and fibroblast-derived materials. FibroBiologics holds 270+ US and internationally issued patents/patents pending across various clinical pathways, including wound healing, multiple sclerosis, disc degeneration, psoriasis, orthopedics, human longevity, and cancer. FibroBiologics represents the next generation of medical advancement in cell therapy and tissue regeneration. For more information, visit www.FibroBiologics.com.

For more information, please visit FibroBiologics' website, email FibroBiologics at info@fibrobiologics.com or follow FibroBiologics on LinkedIn, YouTube, Facebook or X.

**Cautionary Statement Regarding Forward-Looking Statements**

This communication contains "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995. Forward-looking statements include, but are not limited to, statements regarding the potential and capabilities of fibroblasts and HDF spheroids, including to reprogram the burn wound environment by dampening harmful inflammation, reshaping immune cell behavior, and reducing markers of scar-forming activity, the potential of FibroBiologics' wound care platform and its expansion to burn injuries, indications of interest, the potential applications and clinical benefits of fibroblasts and HDF spheroids, and the robustness, progress, timing, and momentum of FibroBiologics' research and development program. These forward-looking statements are based on FibroBiologics' management's current expectations, estimates, projections, and beliefs, as well as a number of assumptions concerning future events. When used in this communication, the words "estimates," "projected," "expects," "anticipates," "forecasts," "plans," "intends," "believes," "seeks," "may," "will," "should," "future," "propose" and variations of these words or expressions (or the negative versions of such words or expressions) are intended to identify forward-looking statements. These forward-looking statements are not guarantees of future performance, conditions or results, and involve a number of known and unknown risks, uncertainties, assumptions and other important factors, many of which are outside FibroBiologics' management's control, that could cause actual results to differ materially from the results discussed in the forward-looking statements, including those set forth under the caption "Risk Factors" and elsewhere in FibroBiologics' annual, quarterly and current reports (i.e., Form 10-K, Form 10-Q and Form 8-K) as filed or furnished with the SEC and any subsequent public filings. Copies are

available on the SEC's website, www.sec.gov. These risks, uncertainties, assumptions and other important factors include, but are not limited to: (a) risks related to FibroBiologics' liquidity and its ability to maintain capital resources sufficient to conduct its business; (b) expectations regarding the initiation, progress and expected results of FibroBiologics' R&D efforts and preclinical studies; and (c) the unpredictable relationship between R&D and preclinical results and clinical study results. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and FibroBiologics assumes no obligation and, except as required by law, does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise. FibroBiologics gives no assurance that it will achieve its expectations.

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