

## **Neuraminidase treatment for faster diabetic wound healing**

Diabetes mellitus is a chronic disorder that leads to multiple complications including impaired wound healing. Fibroblasts are crucial in the wound healing process as they are involved in creating new extra cellular matrix and collagen structures, contracting the wound, and supporting other components involved in the process of normal wound healing. Impaired functioning of fibroblasts inhibits the wound healing process as factors that are released by fibroblasts like fibroblast growth factor (FGF), keratinocyte growth factor (KGF) and vascular endothelial growth factor (VEGF) are associated with cell proliferation and migration. Diabetic dermal fibroblasts (DDFs) are more elongated but less motile and less contractile than Healthy dermal fibroblast (HDFs) based on a comparison of their phenotypes. Reduced motility of DDFs is attributed to formation of larger focal adhesions which are stabilized by a bulky glycocalyx characterized by increased expression of the cell surface glycoprotein mucin 16 (MUC 16). Disruption of the glycocalyx not only restores DDF motility to levels comparable to that of HDFs, but also leads to increased proliferation and increased collagen synthesis.

Features of our invention:

A method for improving wound healing by:

- altering glycocalyx of dermal fibroblasts, using Neuraminidase or fragments thereof.
- increasing proliferation of dermal fibroblasts.
- increasing collagen secretion by dermal fibroblasts.
- improving motility of dermal fibroblasts.