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Project Title: VEGF Receptor Signaling in Dermal Fibroblasts: Implications for Scarring

Year Awarded: 2005 while at Loyola University Medical Center

What did you hope to learn through this research?

The purpose of this project was to determine whether the pro-angiogenic growth factor VEGF (vascular endothelial growth factor) promotes scar formation and whether it does so by acting directly on fibroblasts.

What can you tell us about the progress made in this area since you completed your Fellowship?

The results of our work indicated that VEGF stimulates the production of scar tissue; exposing murine fetal wounds that normally heal scarlessly caused them to form scars and inhibiting VEGF activity in adult mice resulted in the formation of smaller scars. It is still not clear whether VEGF promotes scar formation due to direct effects on fibroblasts or whether indirect mechanisms involving angiogenesis or inflammation are responsible.

How did this Fellowship help your career?

Receiving the WHSF-3M Fellowship helped me obtain an independent faculty position, motivated me to become a more active member of the Wound Healing Society, and solidified my commitment to a career in wound healing research.

How did you get interested in wound healing and this area in particular?

My interest in wound healing began as a graduate student studying the effects of inflammation on non-melanoma skin cancer. Unfortunately, there are not many effective treatments for this extremely common cancer type aside from surgical removal of the tumor. Because these tumors typically arise on sun-exposed skin, excision of the cancerous lesion often results in significant scarring on visible sites. Thinking about the process these patients have to go through is what made me become interested in the process of wound repair and scar formation in particular.

What are your future plans for your work in wound healing?

We continue to study the function of VEGF in wound healing, focusing mainly on alternative functions for VEGF in repair aside from its known role in angiogenesis. We also have active projects trying to understand how inflammation regulates wound repair and to identify the mechanisms involved in scarless wound healing, which occurs at early stages of embryonic development.