

Protein may be key to psoriasis and wound care

June 21 2012

Psoriasis is an autoimmune disorder in which skin cells proliferate out of control. For some hard-to-heal wounds, the problem is just the opposite: Restorative skin cells don't grow well or fast enough. In a paper published in the June 21, 2012 issue of *Immunity*, researchers at the University of California, San Diego School of Medicine describe a molecule that may lead to new treatments for both problems.

An international team of scientists led by principal investigator Richard L. Gallo, MD, PhD, professor of medicine and chief of UC San Diego's Division of Dermatology, analyzed skin biopsies of patients with and without psoriasis, as well as the skin of mice with psoriasis and with wounds on their backs. They discovered that a molecule called regenerating islet-derived protein 3-alpha (REG3A) is highly expressed in skin cells during psoriasis and wound-healing, but not under normal skin conditions.

In tests on mice, researchers found that inhibiting REG3A slowed wound-healing but cleared up psoriasis, which is commonly characterized by patches of inflammation and white, scaly skin.

The scientists also noted that REG3A acts in concert with interleukin-17 (IL-17), an [immune system protein](#) involved in the signaling cascade which prompts skin cells to multiply in excess numbers. "IL-17 binds to receptors on [skin cells](#) and causes REG3A to be expressed, which then binds to another protein inside the cells that promotes cell growth," said first author Yuping Lai, PhD, professor of microbiology and immunity

at East China Normal University in Shanghai.

Gallo said the discovery of REG3A's dual roles provides a new target for different therapies.

"A drug that inhibits the expression of REG3A could represent a more targeted way to treat psoriasis without the systemic immunosuppression problems of current treatments. Conversely, a drug that stimulates or mimics REG3A could boost cell growth and improve [wound healing](#)."

More information: Lai et al.: "The Antimicrobial Protein REG3A Regulates Keratinocyte Proliferation and Differentiation after Skin Injury." DOI:10.1016/j.immuni.2012.04.010

Provided by University of California - San Diego

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