

Growth Factors Prove Effective for Regeneration and Rejuvenation

By Ahmed Al-Qahtani, Ph.D.

In recent years, it has been a priority of researchers and physicians to improve their understanding of the biological mechanisms of cell signaling molecules, otherwise known as growth factors, in hopes of discovering enhanced wound-healing therapies. The complexity extends beyond the delivery method of these molecules, as specific growth factor families are liable for triggering several biological signaling pathways and thus must be highly selective and regulated.

Growth factors are naturally produced by the body and are critical for

the stimulation of growth in living cells. These cytokines, interleukins and small proteins, which are naturally excreted from various cells of the body, particularly fibroblasts, signal the proliferation and growth of cells. Present day, the topical application of growth factors to chronic wounds has been acknowledged as a specific therapy with major benefits. This new frontier has paved the way for many scientists and clinicians to explore the possibilities of advancing their practice and bettering their results via proper delivery of the correct concentration and combination of appropriate growth factors.



Burn wound before and after 21 days of AQ Recovery Serum treatment

Photos courtesy of AQ Skin Solutions



Acne before and six weeks after microneedling Tx and daily application of AQ Recovery Serum

Photos courtesy of AQ Skin Solutions



Ahmed Al-Qahtani, Ph.D.

Dr. Al-Qahtani is a National Institutes of Health (NIH) scientist and is accredited with numerous scientific publications as well as his patented growth factor technology (U.S. Pat. 8,518,879). He is a long-standing member of the *American Association of Immunologists* and is an assistant professor with the faculty of medicine at the United Arab Emirates University (Al-Ain, United Arab Emirates).

While the discovery of growth factor technology was at the forefront of immunology, it proved to be an equal breakthrough for skin rejuvenation and hair restoration because of the benefits: high-speed recovery, reduced downtime and improved results. Their ability to easily penetrate bare skin and enhance the immune system response triggers secretion of other vital growth factors necessary to repair the skin. It is unsurprising that an application of serums or conditioned media containing growth factors would help accelerate the regenerative process when used as a supplement to conventional rejuvenating therapies such as lasers or microneedling. Application of topical growth factors assists in the subsequent activation and proliferation of fibroblasts, which serve to alert the senescent cells to their pseudo-wounded state, thus allowing the body's own healing potential to be unleashed and used for rejuvenation. Surely, this would account for the significant regeneration observed in individuals treated with topical growth factors for wrinkles, discoloration, roughness and other unsightly cosmetic concerns.

As the body works synergistically and systematically, so too must an approach to rejuvenation that seeks to harness the innate power of its healing pathways, be engineered with similarly synergistic principles in mind. For this reason, a patented proprietary mixture of cytokines and human growth factors has proven exceptional in delivering this desired rejuvenation (U.S. Pat. 8,518,879). AQ Skin Solutions pharmaceutical grade serums contain patented growth factor technology that can stimulate a cooling sensation, minimize the risk of scarring and signal re-epithelialization for better results and a quicker recovery period. The AQ serums also help to produce collagen in connective tissue cells, which will result in better, long lasting benefits.

Growth factors are very delicate peptides that can degrade if not formulated and delivered properly. Effective delivery methods of growth factors largely depend on the formulation combined with the fragility of growth factor conformation. AQ's clinical research on how to effectively increase the retention of growth factors for maximum penetration has proven to yield exponential results.