



Turning Back the Clock

Human Growth Factors for Anti-ageing

As our skin ages, it undergoes changes such as irregular pigmentation, skin thinning, loss of elasticity, formation of wrinkles and loss of skin tone that are due to genetic and environmental factors. Growth factors and cytokines are emerging as the latest anti-ageing treatments to reverse skin ageing with increasing reports of their effectiveness now published in medical literature.

Growth factors are naturally occurring proteins that are capable of altering cell growth, both stimulating and inhibiting specific actions. All types of skin cells in both the epidermis and dermis produce them. Growth factors play an integral part in maintaining healthy skin structure and function, but production decreases as we age.

Some growth factors are called cytokines, which are small cell-signalling proteins that have an important immune function in the skin. Cytokines play a critical role in inflammation in the skin following injury – including that caused by IPL, laser treatments, micro-dermabrasion and peels. Growth factors and cytokines are necessary for skin repair and regeneration during the healing phase.

Growth factors used in anti-ageing products can be obtained from cultured human skin cells (keratinocytes), fatty tissue (adipose) stem cells or genetically engineered stem cells. The cells are cultured to form a 3 dimensional network that secretes a mixture of growth factors and proteins. The growth factors include HGF (Hepatocyte Growth Factor), TGF-B (Transforming Growth Factor Beta), FGF (Fibroblast Growth Factor), IFNG (Interferon Gamma) and PDGF (Platelet Derived Growth Factor).

Most growth factors are large hydrophilic (water loving) molecules greater than 20kDa molecular weight, therefore they are unlikely to penetrate through normal epidermis in measurable quantities when applied to the skin surface. However, growth factors are active in the epidermis.

Some growth factors can be transported into the dermis through hair follicles, sweat glands, damaged skin or via an optimised delivery system such as liposomes. Growth factors act as messenger molecules communicating between the epidermal and dermal cells.

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Growth factors and cytokines are inherently unstable when not in their usual environment and may be further inactivated in formulations containing surfactants, emollients or preservatives. Products therefore often have a short shelf life.

Several ‘cosmeceutical’ products contain either a single human growth factor or combinations of multiple growth factors and cytokines. One may presume that a combination of growth factors and cytokines is more likely to be effective. However it is not yet certain which agents are the best.

The manufacture of cosmeceuticals, or cosmetics with active ingredients, is unregulated and they do not undergo the same testing as is required for registered medicines. It can be difficult to interpret cosmeceutical marketing hype, as manufacturers must avoid making claims to suggest they are drugs.

Growth factors and cytokines can be combined with antioxidants and retinoic acid, but choosing a suitable anti-ageing skin care regime can be confusing. Sun protection and avoiding smoking remain the most important measures.

The retail cost of growth factor products in New Zealand ranges from \$140.00 to \$400.00 for 3-4 months supply.

If you would like a “Free Consultation” to talk about your skincare requirements, please contact

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