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NovoSerum™: Procollagen and GAG Response in a Double-Blind Study

Research conducted by Robert M. Lavker, Ph.D., Director of Dermatology Research, Northwestern University Medical School. U.S. Patent No. 8,790,710 B.

What NovoSerum™ is

NovoSerum™ is a patent-pending, cell-free cosmetic ingredient derived from purified human umbilical cord serum (UCS), collected from volunteer donors after a healthy birth and sourced through a U.S.-based, FDA-regulated cord blood bank. The serum is processed to strip out cellular material: it contains no stem cells and no living cells.

What remains is a concentrate of human growth factors — approximately 350 molecules, proteins, cell signalers, nutrients, peptides and vitamins. In some formulations this is further combined with 12 antioxidants, four neuro-peptides, six collagen and matrix stimulants, eight antibacterial and anti-inflammatory agents, and 24 moisturizers.

Mechanism

Growth factors are naturally occurring signaling proteins that coordinate the body's healing response by communicating with cells involved in tissue repair and remodeling. Applied topically, the growth factors and peptides in NovoSerum™ signal the skin's natural renewal process, triggering dermal fibroblasts to increase production of collagen precursors and extracellular matrix components — the source of the measured procollagen and glycosaminoglycan (GAG) increases.

Study results: procollagen

Treated (R) site with NovoSerum™ versus (L) site with vehicle only.

Subject	Change vs. vehicle-only control
Subject 1	1.1% increase
Subject 2	41.4% increase
Subject 3	47.5% increase
Subject 4	35.8% increase
Subject 5	17.7% increase
Subject 6	13.0% decrease

5 of 6 subjects showed increases — average increase of approximately 28.7%.

Study results: glycosaminoglycans (GAGs)

Subject	Change vs. vehicle-only control
Subject 1	80.0% increase
Subject 2	43.0% increase
Subject 3	58.7% increase
Subject 4	16.7% decrease
Subject 5	37.8% increase
Subject 6	22.3% increase

5 of 6 subjects showed increases — average increase of approximately 48.4%.

Summary

NovoSerum™-treated skin showed an average increase of approximately 29% in procollagen and 48% in GAGs compared with the vehicle-only control — both critical markers of skin repair, collagen production and skin quality. A double-blind study at Northwestern University Medical School reported these significant increases in under a month.

NovoSerum™, a cell-free extract from umbilical cord serum, contains non-cell platelets which, when stimulated as in wounding, release platelet-derived growth factors. These specific, diverse growth factors are primarily responsible for triggering pluripotent stem cells to modify and begin the repair and reconstruction process resulting from a wound, scarring, stretch marks, abrasions and lacerations. That includes enhanced collagen production and restoration of the damaged cellular matrix — skin — by the glycosaminoglycans (GAGs).