

DA-3711:A POTENT TISSUE-ENGINEERED ACTIVE INGREDIENTS FOR ANTI-AGING

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Summary

In this study, we have investigated the potent anti-aging effect of DA-3711, a cosmetic ingredient derived from artificial skin culture. The artificial skin was originally developed as a skin replacement for the treatment of chronic skin wounds. To produce DA-3711, neonatal human fibroblasts were seeded into biocompatible collagen/chitosan/glycosaminoglycan (GAG) scaffolds and cultured in Dulbecco's modified Eagle's medium (DMEM) supplemented with fetal bovine serum and nonessential amino acids. Analysis of the culture broth (DA-3711) showed that growth factors such as VEGF, TGF- β , KGF were present at significantly higher levels than in the culture broth of fibroblasts cultured in monolayer. The biological activity of DA-3711 was assessed by measuring in vitro cell proliferation and collagen synthesis of normal human fibroblasts. Fibroblasts treated with 10% DA-3711 showed a 2-fold higher proliferation and 2 to 4-fold higher collagen synthesis than untreated cells. DA-3711 also exhibited anti-oxidative effects, since cells under peroxide-induced oxidative stress showed a 30% higher viability in DA-3711-containing medium than in medium without DA-3711 addition. The results suggest that DA-3711 may have anti-aging effects by stimulating skin regeneration and protecting against oxidative stress.