ABSTRACT

Aging is an essential and inevitable part of the biological process. However, the effects of cellular function deterioration reflected on the body causes a need for the development of effective strategies to suppress aging progression; particularly for the skin which shows the most visible signs. As the main component of the skin, type I and III collagen production by fibroblast has been a prominent indicator of aging. As aging progresses, type I and III collagen production are also decreasing. To test the efficacy of anti-aging product containing active AAG1-AAI in stimulating type I and III collagen expression, determination of highest non-cytotoxic treatment concentration was done using the MTS cytotoxicity assay by treating primary dermal fibroblast cells with Product containing active AAG1-AAI; Base; Comparator containing active AAG3-AAD; as well as Combination of Product and Comparator at concentrations of 2%; 1%; 0.5%; 0.25%. It was observed that all treatment groups showed >70% cell viability to indicate non-cytotoxicity, and 0.5% concentration showed the highest cell viability. ELISA was done to analyze type I and III collagen production by administering similar treatment groups at 0.5% concentration through EpiDerm™ Skin Model to simulate penetration in human skin. ELISA results showed an increase in collagen production, with active AAG1-AAI reported to act through TGF-β mimicry and AAG3-AAD reported to reduce IL-6. Increased collagen expression in all treatment groups suggests sufficient penetration into the dermal layer to stimulate collagen production, potentially reflecting application on human skin.

Keywords: Anti-aging; Type I Collagen; Type III Collagen; Human Dermal Fibroblast; ELISA