Synopsis of Original Research Paper

Modification of skin properties by CLA alone or with combination of other fatty acids

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The effects of conjugated linoleic acid (CLA), γ-linolenic acid (GLA) and linoleic acid (LA), and their combinations, on skin properties were investigated in mice. Mice (8-week-old) were orally administrated with either LA, GLA, CLA, LA + GLA, LA + CLA, or CLA + GLA for 4 weeks. Then, the skin was analyzed for triacylglycerol content, fatty acid composition, and collagen content. Additionally, thicknesses of the dermis layer and subcutaneous tissue layer, and the size and number of adipocytes were measured histologically. The skin fatty acid composition was modified depending upon the fatty acid composition of supplemented oils. In each oil-alone group, skin triacylglycerol content was the highest in LA, followed by GLA and CLA. Combinations with CLA reduced triacylglycerol content comparable to the level of CLA alone. No significant changes in collagen content were observed among any treatments. The results for the thickness of subcutaneous tissue were similar to the results obtained in triacylglycerol contents, while no significant difference was detected in the thickness of the dermis layers. The numbers of adipocytes were also reduced by CLA. These results suggest that supplementation with CLA alone or in combination with other fatty acids has an anti-obesity effect on skin properties in mice.