

The effects of coffee oil - algae oil nanoemulsion in UVA-induced damaged on mice skin

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Abstract

In recent years, the application of nanotechnology in cosmetics and pharmaceutical industry has occurred as an auspicious field to promote among its capability in increasing aqueous solubility of lipophilic functional components, encapsulating unstable bioactive compounds, and elevating skin penetration and absorption of bioactive amalgamations. Among the various nano techniques, the development of microemulsion or nanoemulsion is quite popular because of its ease in preparation. Coffee oil and algae oil can be utilized as a raw material in cosmetics. Marine algae oil is the best source for docosahexaenoic acid (DHA) and coffee oil is rich in triacylglycerol (75%) and the rest of that its components are free fatty acid, wax, and some antioxidants such as sterols, tocopherols. The polyunsaturated fatty acids like docosahexaenoic acid (DHA) which mainly exists in algae oil, is a vital fatty acid reported to possess many biological activities such as anticancer, anti-inflammation, antibacterial properties. The mixture of these two oils is evaluated thas effects on melanoma cells as well as the protective effect on UVA-induced skin damage in mice.

Methods and materials: The objectives of this study were to develop a nanoemulsion with both coffee oil and algae oil as raw materials and study its protective effect against UVA-induced skin damage in mice as well as anti-proliferative effect and mechanism on melanoma cells. Also, both coffee oil and algae oil was analyzed by gas chromatography-mass spectrometry (GC-MS).

Result: With due attention to the results of histologic experiments, the effects of the UVA-induced damage group that treated with formulation consist of coffee oil-algae oil nanoemulsion has shown good results.

Biography:

Danial Khayatan has studied pharmaceuticals in phd grade in azad Tehran university and he has worked on some field which is related to cosmeceutical fields such as stem cells and peptides. He held a workshop on December 2019 in iran which named stem cells and its applications in cosmetics in hotel olympic in Tehran which supported by iran cosmetica. As he is a student yet he has some collaborations with other universities such as ferrera university in italy and he hopes to graduate and then work on his interests and endeavor with minimum equipments in his country.

Speaker Publications:

1. "The effects of Raspberry stem cells as an antioxidant in UVB-induced damaged"

[15th Crop Science and Agriculture Summit](#); Webinar-December 09, 2020

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