

The unexplored botanical extracts: a new horizon in skin anti-aging formulation

ABSTRACT

As skin ages, it loses its natural elasticity and become thinner, more fragile, and laxer, taking on a wrinkle appearance. Ultraviolet light, a sequence of changes in the weather and environmental pollution are among the pivotal factors contributing to the acceleration of the natural aging process. The utilization of botanical extracts and herbs has its origins in ancient times. We tried to investigate the anti-aging potentials of senduduk which is among some of the unexplored plant sources found in Malaysia. Our main idea was to emphasize action mechanisms of these botanical extracts based products, in fighting skin aging in term of its ability to scavenge free radicals, to protect the skin matrix through the inhibition of enzymatic degradation, or to promote collagen synthesis in the skin and to provide photoprotection. The experimental data revealed the percentage of DPPH radical scavenging activity, total phenolic content (TPC), and total flavonoid content (TFC) for senduduk extracts were (DPPH: 89.66% ; TPC: 1072.92 mg/g ; TFC: 5.61 mg/g) respectively. The anti-collagenase (AC) and anti-elastase (AE) assay also exhibited good inhibition values of (AC: 94.35% ; AE: 66.67%) respectively. The sun protection factor (SPF) value obtained was 22.44 for senduduk. Next, a nanoemulsion comprising of a mixture senduduk extracts was formulated and subjected physiochemical and in-vivo analysis. Finally, the image analysis offered a quick and consistent approached for quantifying skin aging feature which showcased reduction in skin wrinkle and improvement in skin texture, thus emphasizing the formulation's efficacy as a promising natural anti-aging source.

Keyword: Senduduk; Antioxidant; Anti-Aging; Botanical sources; Melastoma