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Anti-wrinkle activity of the ethanolic extracts of the leaves of *Morus alba L.* and *Morus nigra L.*

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UV irradiation damages skin cells by the photochemical generation of reactive oxygen species (ROS) that damages nucleic acids, lipids, and proteins, including collagen. UVB light is mainly absorbed in the epidermis, which impairs the synthesis of collagen and induces matrix metalloproteinases (MMPs), and hence contributes to wrinkle formation. Antioxidants protect skin from free radicals, thus fighting the signs of aging. The antioxidant capacity of the ethanolic extract of the leaves of *Morus alba* and *Morus nigra* was evaluated applying: 2,2-diphenyl-1-picryl-hydrazyl (DPPH), 2,2'-azino-bis (3-ethylbenzo-thiazoline-6-sulfonic acid), diammonium salt (ABTS•+), ferric reducing antioxidant power assay and ferrous ion-chelating assay. The anti-wrinkle activity was assessed by subcutaneous administration of EAR/15weeks in UVB irradiated mice then measuring wrinkle score, MMP-2 & MMP-9 gene expression, in addition to, measuring skin thickness and elasticity histologically. *M. alba* and *M. nigra* leaves showed high free radical scavenging activity against DPPH with IC₅₀ 494 and 726 µg/ml, respectively, and against ABTS•+ with IC₅₀ 765.69 and 897.66 µg/ml, respectively, both leaves also showed high Fe³⁺ and Fe²⁺ chelating ability. Anti-wrinkle results revealed that *M. alba* and *M. nigra* leaves inhibited MMP-2 expression (0.6±0.04 and 0.54±0.08, respectively), MMP-9 (0.78±0.06 and 0.68±0.08, respectively) and low wrinkle score (2.65±0.42 and 2.44±0.48, respectively), these results were significant with respect to the diseased group which showed 0.72±0.08, 1.28± 0.2 and 3.70±0.23 for MMP-2, MMP-9 and score wrinkles. The metabolic profile of the ethanolic extracts of both leaves was studied using LC-MS technique. The high antioxidant activity of the standardized EAR is responsible for its anti-wrinkle activity and hence could be incorporated in skin formulations, based on its antioxidant activity.

Biography

Mai M Raslan has completed her PhD in 2011 from Cairo University, Faculty of Pharmacy, Egypt. She is the Director of Quality Assurance unit in Faculty of Postgraduate Studies for Advanced Sciences, Beni-Suef University, Egypt.

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