ANTI-SKIN AGING EFFECT OF (*Gracilaria birdiae)* SEAWEEDS EXTRACT

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This Final Year Project Report entitled **"Anti-Skin Aging Effect of (*Gracilaria birdiae*) Seaweeds Extract"** was submitted by Nor Iwani Farzana Binti Mohamad Zamri in partial fulfilment of the requirement for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences and was approved by

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ABSTRACT

Anti-Skin Aging Effect of (*Gracilaria birdiae*) Seaweeds Extract

Anti-aging research focuses mainly on slowing, preventing, or reversing the aging process mainly on the skin. Malaysians are exposed to hot temperatures, which might accelerate the aging process as one of the main factors that causes skin aging is ultra-violet (UV) radiation. Seaweed is one of the most useful and widely available natural skincare ingredients. It is a concentrated form of seawater that may absorb minerals from the surrounding water. *Gracilaria birdiae* contains a wide range of bioactive compounds that can potentiate many effects such as antibacterial, antifouling, and herbivore deterrents, as well as UV-screening agents. These bioactive compounds include carotenoids, terpenoids, xanthophylls, chlorophyll, vitamins, saturated and polyunsaturated fatty acids, amino acids, and antioxidants. In this study, we tested *Gracilaria birdiae* ethanolic extract for antioxidant activity using DPPH and anti-tyrosinase activity. Due to the central role of oxidant in skin aging, we hypothesized that *G.birdiae* extract to have significant anti-tyrosinase activity due to its antioxidant activity. *G.birdiae* extract showed substantial antioxidant activity where 0.15 mg/ml extract scavenged 27.88% DPPH. However, *G.birdiae* extract showed minimal or no inhibition on tyrosinase. Based on this finding, the hypothesis is rejected as *G.birdiae* extract exhibits only DPPH scavenging activity but cannot inhibit tyrosinase activity. Nonetheless, *G.birdiae* extract is still a good source of antioxidants and may be useful in various other oxidative disorders.

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