# Uji Aktivitas secara In Vitro dan Uji Manfaat Krim Anti-Aging dari Ekstrak Air Sarang Burung Walet (Collocalia fuchipaga Thunberg.) = In Vitro Activity, Safety and Clinical Effectiveness Test of Water Extract Edible Bird's Nest Anti-Aging Cream (Collocalia fuchipaga Thunberg)

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Abstrak

Sarang burung walet mengandung glikoprotein, asam lemak, dan epidermal growth factor yang diketahui memiliki aktivitas antioksidan dan anti-aging yang potensial. Tujuan dari penelitian ini adalah memperoleh aktivitas antioksidan dan anti-kolagenase dari ekstrak secara in vitro, serta mengetahui reaksi iritasi dan manfaat dari sediaan krim esktrak air sarang burung walet sebagai krim anti-aging pada sukarelawan wanita setelah produk diaplikasikan langsung kepada kulit. Metode ekstraksi menggunakan pelarut aquabidestilata, lalu dikeringkan dengan liofilisasi, selanjutnya diuji kadar protein dalam ekstrak. Aktivitas antioksidan diuji dengan DPPH dan penghambatan kolagenase diuji dengan kit kolagenase inhibitor. Stabilitas fisik krim diuji selama 12 minggu. Uji iritasi kulit dilakukan pada 32 wanita dengan patch oklusif. Uji efikasi sediaan krim anti-aging dilakukan pada 31 wanita dengan durasi pemakaian produk selama 28 hari. Hasil penelitian didapatkan bahwa kadar protein dari ekstrak sarang burung walet adalah 52,08%. Nilai dari IC50 antioksidan adalah 734,52 g/mL sedangkan nilai IC50 dari aktivitas penghambatan kolagenase adalah 118,86 g/mL. Krim anti-aging ekstrak air sarang burung walet stabil secara fisik selama 12 minggu. Krim anti-aging ekstrak air sarang burung walet tidak/sedikit menyebabkan iritasi kulit serta memberikan peningkatan yang signifikan secara statistik ($p < 0,05$) terhadap parameter serat kolagen, elastisitas kulit, kelembaban kulit dan penurunan pigmen kulit setelah 28 hari penggunaan produk. Kesimpulan dari penelitian ini adalah ekstrak air sarang burung walet memiliki aktivitas anti-kolagenase yang cukup kuat, sediaan krim ekstrak air sarang burung walet stabil secara fisik selama 12 minggu dan setelah diuji klinis terbukti efektif untuk mencegah penuaan dini di kulit dengan perubahan nilai parameter aging.

.....Edible bird's nest contains glycoproteins, fatty acids, and epidermal growth factors which are known to have potential antioxidant and anti-aging activities. The purpose of this study was to obtain antioxidant and anti-collagenase activity from extracts, as well as irritation reactions and efficacy of edible bird's nest water extract cream as an anti-aging cream in women volunteers after product being applied directly to the skin. The extraction method used aquabidestilata solvent, then the liquid extract dried by lyophilization, after that determination the protein content in the extract. Antioxidant activity was tested with DPPH and collagenase inhibition activity was tested with a collagenase colorimetric assay kit. The physical stability of the cream was tested for 12 weeks. The skin irritation test was performed on 32 women with an occlusive patch test. The effectiveness test of anti-aging cream was carried out on 31 women with a duration of 28 days of product application. The results showed that the protein content of edible bird's nest was 52,08%. The IC50 value of the antioxidant was 734,52 g / mL while the IC50 value of the collagenase inhibition activity was 118,86 g / mL. Water extract of edible bird's nest anti-aging cream was physically stable for 12 weeks Water extract of edible bird's nest anti-aging cream did not or slightly cause skin irritation and provided a statistically significant increase ($p < 0.05$) in the three parameters of aging, that were collagen fibers, skin

elasticity, skin moisture and a significant reduction in skin pigment color ($p < 0.05$) after 28 days of product application. The conclusion of this study is that the water extract of edible bird's nest has quite strong anti-collagenase activity, water extract of edible bird’s nest anti-aging cream is physically stable for 12 weeks and has been proven effective in preventing premature skin aging by improving the value of the aging parameters.