

**EFEK ANTI-*PHOTOAGING* EKSTRAK DAUN *Centella asiatica*
(L.) Urb. PADA INTEGUMEN TIKUS WISTAR (*Rattus
norvegicus* BERKENHOUT, 1769) DARI PAPARAN RADIASI
UV-B**

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INTISARI

Photoaging merupakan kondisi yang terjadi ketika kulit mengalami beberapa perubahan seperti tebalnya epidermis yang terjadi akibat paparan radiasi ultraviolet (UV) yang berlangsung lama. Penelitian ini meneliti efek pelindung ekstrak daun *C. asiatica* sebagai agen anti-*photoaging* dan antioksidan pada integumen *Rattus norvegicus* (Berkenhout, 1769) yang terpapar radiasi UV-B. Kelompok perlakuan dibagi menjadi beberapa kelompok, yaitu: kelompok standar (S) yang tidak terpapar radiasi UV-B dan tanpa gel CAE; kelompok kontrol negatif (C-) yang terpapar radiasi UV-B dan tanpa gel CAE; kelompok kontrol positif (C+) yang terpapar radiasi UV-B dan diolesi petroleum jelly sebagai gel dasar; kelompok F1 (terpapar radiasi UV-B dan diolesi gel CAE 1%); kelompok F2 (terpapar radiasi UV-B dan diolesi gel CAE 10%); dan kelompok F3 (terpapar radiasi UV-B dan diolesi gel CAE 20%). Paparan radiasi UV-B dilakukan selama 15 menit setiap hari selama tujuh hari berturut-turut. Sediaan histologi dari integumen tikus diwarnai dengan pewarnaan Hematoxylin Eosin (HE) dan Mallory Acid Fuchsin (MAF). Pada analisa hasil menunjukkan bahwa *C. asiatica* efektif memperbaiki kerusakan kulit akibat UV-B, dengan penurunan ketebalan epidermis dan stratum korneum, terutama pada konsentrasi yang lebih tinggi (10% dan 20%). Namun, peningkatan diameter kolagen yang diamati tidak selaras dengan penelitian sebelumnya. Hal tersebut mendukung hipotesis bahwa *C. asiatica* kaya akan antioksidan seperti asiaticoside dan madecassoside, yang berfungsi dalam melindungi kulit dari *photoaging* dengan mengurangi stres oksidatif dan mendukung sintesis kolagen.

KATA KUNCI: *Centella asiatica*, kolagen, *photoaging*, radiasi UV-B, tikus Wistar

**ANTI-PHOTOAGING EFFECTS OF *Centella asiatica* (L.) Urb.
LEAF EXTRACT ON THE INTEGUMENT OF WISTAR RATS
(*Rattus norvegicus* BERKENHOUT, 1769) FROM UV-B
RADIATION EXPOSURE**

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ABSTRACT

Photoaging is a condition where the skin experiences various changes, such as thickening of the epidermis, uneven pigmentation, and damage to collagen in the dermis due to prolonged exposure to ultraviolet (UV). This research investigates the protective effects of *C. asiatica* leaf extract as an anti-photoaging agent and antioxidant in the integument of *Rattus norvegicus* (Berkenhout, 1769) exposed to UV-B radiation. The rats were divided into different treatment groups, which were: the standard group (S), which was not exposed to UV-B irradiation and did not receive CAE gel; the negative control (C-), which was exposed to UV-B irradiation and did not receive CAE gel; the positive control (C+), which was exposed to UV-B irradiation and applied with petroleum jelly as a base gel; the F1 group (exposed to UV-B and applied with 1% CAE gel); the F2 group (exposed to UV-B and applied with 10% CAE gel); and the F3 group (exposed to UV-B and applied with 20% CAE gel). The UV-B irradiation was administered for 15 minutes daily for seven consecutive days. Histological slides of the integuments of the rats were stained with Hematoxylin Eosin (HE) and Mallory Acid Fuchsin (MAF) stains. The results show that *C. asiatica* significantly reduces UV-B-induced skin damage, especially at higher concentrations, with a noticeable reduction in epidermis and stratum corneum thickness. However, the increase in collagen diameter observed was inconsistent with previous studies. The findings support the hypothesis that *C. asiatica*, rich in antioxidants like asiaticoside and madecassoside, helps protect the skin from photoaging by reducing oxidative stress and supporting collagen synthesis.

KEYWORDS: *Centella asiatica*, collagen, photoaging, UV-B radiation, Wistar rats