

ABSTRAK

Latar Belakang: Paparan sinar ultraviolet B (UVB) intens di negara tropis seperti Indonesia dapat memicu kerusakan kulit, termasuk peningkatan ketebalan epidermis melalui mekanisme hiperproliferasi keratinosit yang berkontribusi pada proses *photoaging*. Penggunaan fotoproteksi berbahan aktif alami seperti bawang dayak (*Eleutherine palmifolia*) yang kaya antioksidan diharapkan dapat menekan dampak negatif paparan UVB terhadap kulit. **Tujuan:** Mengetahui perbedaan efek aplikasi krim ekstrak bawang dayak dengan berbagai konsentrasi terhadap ketebalan epidermis pada gambaran histopatologi kulit tikus Wistar jantan yang diinduksi radiasi sinar UVB. **Metode:** Penelitian ini menggunakan rancangan *true experimental* dengan *Post-Test Only Control Group Design*. Sebanyak 36 ekor tikus Wistar jantan dibagi secara acak ke dalam empat kelompok: kontrol (krim placebo) dan tiga kelompok perlakuan yang diberikan krim ekstrak bawang dayak dengan konsentrasi 10%, 15%, dan 20%. Penyinaran UVB dilakukan setiap dua hari sekali selama 30 hari, dengan durasi 60 menit setiap pemaparan. Krim dioleskan 2 kali, yaitu 20 menit sebelum paparan dan 4 jam setelahnya. Ketebalan epidermis dianalisis melalui pemeriksaan histopatologi dengan pewarnaan Hematoksin-Eosin dan dibaca dengan perbesaran 400x. **Hasil:** Hasil uji statistik menunjukkan terdapat perbedaan yang bermakna ($p < 0,05$) antara kelompok kontrol dan kelompok perlakuan. Rerata ketebalan epidermis kelompok perlakuan lebih rendah dibandingkan kontrol, dengan penurunan paling besar pada konsentrasi 20%, diikuti 15% dan 10%. Tidak terdapat perbedaan bermakna antara konsentrasi 15% dan 20%. **Kesimpulan:** Aplikasi krim ekstrak bawang dayak efektif menurunkan ketebalan epidermis akibat paparan sinar UVB, dengan konsentrasi 20% memberikan efek protektif yang optimal. Hasil ini mendukung potensi bawang dayak sebagai agen fotoprotektif berbahan alami.

Kata kunci: Bawang dayak, *Eleutherine palmifolia*, ketebalan epidermis, *photoaging*, antioksidan

ABSTRACT

Background: Exposure to ultraviolet B (UVB) radiation in tropical regions such as Indonesia can induce skin damage, including increased epidermal thickness through keratinocyte hyperproliferation, which contributes to the process of photoaging. The use of natural photoprotective agents, such as dayak onion (*Eleutherine palmifolia*) extract, which is rich in antioxidants, is expected to help reduce the negative impact of UVB exposure on the skin. **Aim:** To determine the differences in the effect of applying dayak onion extract cream at various concentrations on epidermal thickness in the histopathological appearance of male Wistar rat skin induced by UVB radiation. **Methods:** This study was a true experimental study with a post-test only control group design. A total of 36 male Wistar rats were randomly divided into four groups: a control group (given placebo cream) and three treatment groups given dayak onion extract cream at concentrations of 10%, 15%, and 20%. UVB exposure was carried out for 60 minutes every two days for 30 days, along with application of the cream 20 minutes before and 4 hours after UVB radiation. Epidermal thickness was analyzed through histopathological examination using Hematoxylin-Eosin staining and observed under 400x magnification. **Results:** Statistical analysis showed significant differences ($p < 0,05$) in epidermal thickness between the control group and the treatment groups. The mean epidermal thickness in the treatment groups was lower than that of the control group, with the greatest reduction observed in the 20% concentration group, followed by the 15% and 10% groups. There was no significant difference between the 15% and 20% concentrations. **Conclusion:** Application of dayak onion extract cream is effective in reducing epidermal thickness caused by UVB exposure, with a concentration of 20% providing optimal protective effects. These findings support the potential of dayak onion as a natural photoprotective agent.

Keywords: Dayak onion, *Eleutherine palmifolia*, epidermal thickness, photoaging, antioxidant