ABSTRAK

Latar belakang: Paparan UVB pada kulit akan meningkatkan kadar radikal bebas dan menyebabkan hiperpigmentasi. Buah tomat mengandung antioksidan dan polifenol yang mampu meredam radikal bebas dan menghambat aktivitas enzim tirosinase. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak tomat topikal terhadap kadar *Malondyaldehide* (MDA) dan jumlah melanin pada kulit yang terpapar UVB.

Metode: Penelitian eksperimental menggunakan 28 ekor mencit BALB/c betina terbagi secara acak atas 4 kelompok: Kelompok 1(K-1) diberi basis lotion, kelompok 2 (K-2), kelompok 3 (K-3) dan kelompok 4 (K-4) masing-masing diberi lotion ekstrak tomat 0,14%; 0,7% dan 1,4% setiap hari. Semua kelompok diberi paparan UVB 1 MED sebelum aplikasi lotion setiap 2 hari sekali selama 2 minggu. Hari ke-16 mencit diterminasi kemudian diambil jaringan kulit punggungnya untuk pemeriksaan kadar MDA jaringan dan jumlah melanin. Data dianalisis dengan uji *one way* ANOVA, *post-hoc* LSD dan korelasi Pearson.

Hasil: Uji One Way ANOVA menunjukkan terdapat perbedaan kadar MDA dan jumlah melanin yang bermakna di antara kelompok, $p<0,05$. Uji *post-hoc* LSD menunjukkan kadar MDA pada K-4 (1,13) secara signifikan lebih rendah dibanding K-3 (2,21), K-2 (2,47) dan K-1 (5,61), $p < 0,005$. Sedangkan jumlah melanin pada K-4 (10,00) lebih rendah secara signifikan dibandingkan K-2 (23,50) dan K-1 (33,67), $p<0.005$. Jumlah melanin pada K-3 adalah 13,00; tidak berbeda signifikan dengan K4, p=0,0,37. Korelasi kedua variabel kuat dengan nilai korelasi Pearson (r^2) = 0,648

Kesimpulan: Pemberian ekstrak tomat topikal menurunkan kadar MDA dan jumlah melanin pada kulit mencit yang terpapar sinar UVB.

Kata kunci: UVB, ekstrak tomat, MDA, melanin

ABSTRACT

Background: UVB exposure to skin may increase free radical level and cause hyperpigmentation. Tomato (Lycopersicum pyriforme L.) contain antioxidant and polyphenol that may quench free radical and inhibit tyrosinase enzyme. This study was aimed to examine the effect of topical tomato lotion on Malondyaldehide (MDA) level and melanin count in skin exposed to UVB.

Methods: In this experimental study. 28 female Balb/c mice were randomly devided into 4 groups: control group (K-1) were given base lotion, while group 2 (K-2), goup 3 (K-3) and group 4 (K-4) were given tomato lotion at the concentration of 0.14%, 0.7% and 1.4% every day. All groups were exposed to UVB at 1MED once every two days for two weeks before lotion application.On day 16, all mice were terminated. Skin tissue were prepared for tissue MDA examination and melanin count.

Results: The one-way ANOVA tests showed a significant difference in the MDA level and melanin count among the group ($p<0.05$). Post-hoc LSD test showed that the levels of MDA of K-4 (1.13) was significantly lower than K-3 (2.21), K-2 (2.47) and K-1 (5.61), $p<0.005$. While the melanin count in the K-4 (10.00) was significantly lower than K-2 (23.50) and K-1 (33.67). Melanin count for K-3 was 13.00, not significantly differ from K-4.The correlation between MDA level and melanin count was strong with Pearson Correlation value (r^2) = 0.648

Conclusion: Topical administration of tomato extract lotion decreased tissue MDA level and melanin count significantly on the mice skin exposed to UVB.

Keywords: UVB, tomato extract, MDA, melanin