

INTISARI

Latar Belakang: Pewangi ruangan mengandung zat kimia berbahaya seperti formaldehida. Karbon aktif sering digunakan sebagai adsorben untuk mengurangi polusi udara. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan karbon aktif terhadap histologi kornea *Rattus norvegicus* yang diinduksi pewangi ruangan.

Metode: Jenis penelitian ini adalah eksperimental laboratorik dengan *post-test only control group design*. Subjek penelitian 28 ekor *Rattus norvegicus* jantan galur Wistar, terbagi 4 kelompok yaitu Kontrol (K), Pewangi (P1), Karbon Aktif (P2) dan pewangi ditambah karbon aktif (P3). Perlakuan dilakukan 8 jam/hari selama 35 hari. Data ketebalan epitel anterior dianalisis dengan uji statistik *One Way Anova*. Data ketebalan epitel keseluruhan dan jumlah keratosit dianalisis dengan uji statistik *Kruskal Wallis*.

Hasil: Uji statistik ketebalan kornea keseluruhan dan ketebalan epitel anterior menunjukkan perbedaan tidak bermakna pada semua kelompok subyek ($p > 0,05$). Uji statistik terhadap jumlah keratosit menunjukkan perbedaan bermakna antara kelompok subyek ($p < 0,05$), dilanjutkan dengan uji *Mann Whitney* menunjukkan hasil $P1 > P3 > K > P2$

Kesimpulan: Penggunaan karbon aktif granular memiliki pengaruh positif dalam mengurangi kerusakan kornea *Rattus norvegicus* yang diinduksi oleh pewangi ruangan.

Kata Kunci: Kornea, Karbon Aktif, Pewangi Ruangan, *Rattus norvegicus*, Keratosit

ABSTRACT

Background: Air freshener contain hazardous chemical such as formaldehyde. Activated carbon is used as an adsorbent to reduce air pollution. The goal of this research is to know the use of activated carbon to cornea histology on *Rattus norvegicus* that was induced with air freshener.

Method: This research was an experimental study with a post-test only control group. The subjects were 28 one-month old male *Rattus norvegicus* Wistar strains divide into 4 groups: Control (K), air freshener (P1), activated carbon (P2) and air freshener plus activated carbon (P3). The treatment was performed 8 hours/day for 35 days. Data of anterior epithelial thickness were analyzed by *One Way Anova* test. Data of the overall thickness of the corneal layer and keratocyte number were analyzed by *Kruskal Wallis* test.

Result: The overall thickness of the corneal layer and anterior epithelial thickness showed that there were not significant difference between subject groups ($p > 0,05$). Keratocyte number showed significant difference between subject groups ($p < 0,05$), *Mann Whitney* test for Keratocyte number showed results $P1 > P3 > K > P2$

Conclusion: Activated carbon gives positive effect to reduce cornea damage on *Rattus norvegicus* that induced by air freshener.

Keywords: Cornea, Activated Carbon, Air Freshener, *Rattus norvegicus*, Keratocyte