

ABSTRACT

THE EFFECT OF BLACK CUMIN EXTRACTS (*Nigella sativa* L.) ON HISTOPATOLOGICAL APPEARANCE OF WHITE RATS (*Rattus norvegicus*) LUNG ALVEOLI INDUCED GENTAMICIN

By

NURUL HIDAYAH

Gentamicin is antibiotic used to treat a variety of infections. Some studies suggest that gentamicin is xenobiotics have toxic effects on several organs in repeated use and with high doses. One of organs that damaged by xenobiotics is lungs. Black cumin is medicinal plants that can prevent the destruction with antioxidant mechanism.

This study aims to know the effect of black cumin extracts on histopathological appearance of white rats lung alveoli induced gentamicin. Microscopic appearance of alveolus was observed is alveolar edema. This experimental study using 30 male white rats (*Rattus norvegicus*) *Sprague Dawley* strain based on calculations with frederer's formula. The data was collected by calculated of the observed cells under a microscope. Then, existing data was analyzed using the Kruskal-wallis and Mann-whitney.

The results of this study indicate that the K1 (normal control group) showed alveolar edema with an average of $1.37 \pm 1.79\%$, K2 (pathological control group) with an average of $55.11 \pm 18.20\%$, K3 (treatment group 500mg/KgBB black cumin) with an average of $27.33 \pm 9.61\%$, K4 (treatment group 1000mg/KgBB black cumin) with an average of $22.03 \pm 8.48 \%$, K5 (treatment group 1500mg/KgBB black cumin) showed with an average of $17.57 \pm 7.02\%$. Kruskal-wallis test results showed a significant difference in at least between two treatment groups. The most significant differences are between K1 and K2, K1 and K3, K1 and K4, and K5 K1, K2 and K3, K2 and K4, K2 and K5 with $p = 0.000$, while the K3 and K4 ($p = 0.004$), K4 and K5 ($p = 0,016$).

Giving black cumin extract can reduce the percentage of cell edema worth 37,54%. This study proved that black cumin extracts has a protective influence on lung alveoli appearance of white rats induced gentamicin.

Keywords: gentamicin, lung alveoli, black cumin extracts, *Nigella sativa* L.