

ABSTRACT

THE EFFECT OF THYMOQUINONE ON TRACHEA HISTOPATHOLOGY OF *Sprague dawley* STRAINS WHITE RAT (*Rattus norvegicus*) EXPOSED BY CIGARETTE SMOKE

By

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Background: Cigarette has become one of the biggest causes of death in the world. *Thymoquinone*, which is the largest bioactive component of *Nigella sativa* seeds, is believed to be able to neutralize free radicals in cigarette smoke. This study aims to analyze the effect of *thymoquinone* on trachea histopathology of *Sprague dawley*'s white rat exposed by cigarette smoke.

Methods: This study is a laboratory experimental with post test only control group design using 24 *Sprague dawley* white rats which were divided into 4 groups and were treated for 14 days. K1 was given regular meal, K2 was given cigarette smoke, K3 was given cigarette smoke and olive oil 0,5 ml, P1 was given cigarette smoke, olive oil 0,5 ml, and *thymoquinone* 5 mg/kgBB/day.

Results: The average score of trachea histopathology damage on K1: 0,37, K2: 2,67, K3: 1,73, P1: 1,93. The data was analyzed by *One Way Anova* test which the result is p=0,001 (p=0<05).

Conclusion: There is significant effect of *thymoquinone* on trachea histopathology of *Sprague dawley*'s white rat exposed by cigarette smoke.

Keywords: Cigarette, *thymoquinone*, trachea histopathology.

ABSTRAK

PENGARUH PEMBERIAN *THYMOQUINONE* TERHADAP HISTOPATOLOGI TRAKEA TIKUS PUTIH (*Rattus* *norvegicus*) GALUR *Sprague dawley* YANG DIPAPAR ASAP ROKOK

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Latar belakang: Rokok telah menjadi salah satu penyebab kematian terbesar di dunia. *Thymoquinone* yang merupakan komponen bioaktif terbesar dari biji *Nigella sativa* dipercaya dapat menetralisir radikal bebas pada asap rokok. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *thymoquinone* terhadap histopatologi trachea tikus putih galur *Sprague dawley* yang dipapar asap rokok.

Metode: Penelitian ini merupakan penelitian eksperimental laboratorik dengan desain *post test only control group design* dengan menggunakan 24 ekor tikus putih galur *Sprague dawley* yang dibagi ke dalam 4 kelompok dan diberi perlakuan selama 14 hari. K1 diberi makan minum biasa, K2 dipapar asap rokok, K3 dipapar asap rokok dan diberi minyak zaitun 0,5 ml, P1 dipapar asap rokok dan diberi minyak zaitun 0,5 ml serta *thymoquinone* 5 mg/kgBB/hari.

Hasil: Hasil rerata kerusakan histopatologi trachea pada K1: 0,37, K2: 2,67, K3: 1,73, P1: 1,93. Data dianalisis dengan Uji *One Way Anova* didapatkan $p=0,001$ ($p=0<05$).

Simpulan: Terdapat pengaruh pemberian *thymoquinone* terhadap histopatologi trachea tikus putih galur *Sprague dawley* yang dipapar asap rokok.

Kata kunci: Histopatologi trachea, rokok, *thymoquinone*.