

**EFFECT OF CIGARETTE SMOKE ON TYPE II PYCNOTIC CELLS AT  
INTRALVEOLAR SEPTA OF MICE TREATED BY AROMATHERAPY  
EXTRACT OF *Hibiscus sabdariffa* CALYX**

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**ABSTRACT**

This research aimed was to prove the effect of cigarette smoke on type II cells and to prove that the treatment of aromatherapy extract of *Hibiscus sabdariffa* (Roselle) calyx can decrease type II pycnotic cells caused by cigarette smoke by counting the number of type II pycnotic cells at intralveolar septa of mice. The study was conducted in November 2014 – January 2015 at the Laboratory of Animal Experiment and Laboratory of Veterinary Pathology, Faculty of Veterinary Medicine, Universitas Airlanga. Twenty five three-months-old male mice (*Mus musculus*) were divided into five groups (Control, P1, P2, P3 and P4). Control group did not receive exposure or treatments. Meanwhile mice in P1, P2, P3 and P4 were treated with cigarette smoke exposure and aromatherapy extract of Roselle calyx respectively for 14 days. Lung histopathological preparation were stained with Hematoxylin Eosin then examined under 400× magnification. Statistical comparisons were performed using SPSS Statistic Version 20. Data were compared by ANOVA and Tukey-HSD. The result of ANOVA showed significant difference among Control, P2, P4 groups with P3 and P1 groups ( $p < 0.05$ ) while Tukey-HSD test, showed the group exposed by cigarette smoke only had the highest percentage of type II pycnotic cells and significantly different from the others. Meanwhile, the group that was exposed by cigarette smoke and treated by Roselle calyx extracted aromatherapy for 2 hours had the lowest percentage of type II pycnotic cells.

**Keywords :** *Cigarette Smoke, Hibiscus sabdariffa, Roselle, Type II Cell, Pycnotic.*