



Simposium

**Tatalaksana Penyakit Infeksi dan Keganasan Secara
Komprehensif**

Kumpulan Abstrak

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Relationship between Colon Cell Histopathological Change and the Time Length of Intake of Re-used Cooking Oil with a Level of Malondialdehyde on Swiss Derived *Mus musculus L*

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Background:

Re-used cooking oil comes from many different types of cooking oil and has experienced chemical change. The utilization of re-used cooking oil, especially in deep-frying, can result in the creation of toxic free radicals that are harmful for humans. Long period or repeated heating can shorten the usability of the cooking oil due to the increase of the level of peroxide.

Method:

The type of research is experimental with 12 male *Mus musculus L Galur Swiss Derived* mencil that were given re-used cooking oil orally with a dosage of 10 ul/gr BB and split into 4 groups. Group A is a control group with new re-used cooking oil. Group B is given 8-week old re-used cooking oil while group C and D are given 12-week old and 16-week old oil respectively. Application is conducted at the department of pharmacology of FK UPN Veteran, Jakarta. Dissection and sample preparation are done at the anatomical pathology laboratory of FK UI, Jakarta. While the level of *malondialdehyde* (MDA) in mencil blood is inspected at the laboratory of biochemistry and molecular biology of FK UI, Jakarta. Statistical tests utilized are two way ANOVA and Spearman correlation test. The research was conducted from December 2011 to April 2012.

Result:

Based on the level of change of histopathology, goblet cells in group A did not experience any change (0%). Histopathological change was observed occurring from group B with 14% change, increasing to 25% change in group C, and remained the same at 25% change in group D. The grade of change in both surface and goblet cells of the colon in each group of application time length increased linearly with the level of MDA. There was a correlation between the control group and the 8-week, 12-week, and 16-week groups with MDA levels that had statistical significance ($p=0,003$). Histopathological change of colon cell damage, based on Broders classification, on surface cells in relation to MDA level had statistical significance ($p=0,049$). While histopathological change of colon cell damage, based on Broders classification, on goblet cells in relation to MDA level had no statistical significance ($p=0,814$).

Summary: The intake of re-used cooking oil results in the damage of colon mucous cells, which consists of goblet and surface cells

Keywords: Re-used cooking oil, *malondialdehyde* (MDA), colon cells