

Thesis Title Combined Effects of Elephant Garlic Volatile Oil and
Ochratoxin A on Mice Liver and Kidneys

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ABSTRACT

Effect of elephant garlic volatile oil (GVO) and ochratoxin A was studied in male mice. The single oral LD₅₀ was $1,352 \pm 168$ mg/kg determined by probit method. Histopathological finding of the kidneys revealed degeneration and necrosis of proximal convoluted tubules and of liver showed degeneration and necrosis of the hepatocytes. In testis, the seminiferous tubules showed decrease in number of spermatocytes and spermatozoa whereas the spleen showed the increase in number of hemosiderin laden macrophages.

In order to determine effect of GVO and ochratoxin A (OCA), mice were divided into 4 groups : GVO treated, OCA treated, GVO and then OCA (GVO/OCA) treated and control groups. All mice were observed daily until the end of seven day. It was found that serum

glutamic pyruvic transaminase (SGPT) reached the highest level in mice treated with GVO/OCA while the highest level of blood urea nitrogen (BUN) and creatinine occurred in OCA treated group. Histopathological finding of kidneys and liver of mice treated with GVO/OCA showed a lesser severe degree in degeneration and necrosis of proximal convoluted tubule but more severe degree of hepatic degeneration.

For a sequential study, mice receiving GVO singly and GVO/OCA in combination were sacrificed on day 1, 3 and 5. There were an increase of SGPT, BUN and creatinine of both groups of mice on day 3 and gradually increase on day 5 of GVO/OCA group. The increasing level of both kidney and liver enzymes which are corresponding to more severe degree of degeneration and necrosis of renal tubules and hepatocytes depending on time.