

THE EFFECT OF NUTMEG PULP (*Myristica fragrans* H.) ETHANOL EXTRACT ON KIDNEY HISTOPATHOLOGY OF HYPERGLYCEMIC WISTAR RATS

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ABSTRACT

Background: Diabetes is an important public health problem, and the prevalence of diabetes has continued to increase over the last few decades. DM can cause various complications and failure of various organs, one of which is the kidneys. This condition causes a decrease in blood flow and blood supply to the kidneys, which can result in disruption of the glomerular filtration process and impaired kidney function.

Aim: to examine the effect of nutmeg pulp extract on the histopathology of hyperglycemic Wistar rat (*Rattus novergicus*) kidneys.

Method: This research was designed as an experimental study. Using samples of 70% ethanol extract of nutmeg pulp (EDBP) on 25 male Wistar white male rats (*Rattus novergicus*) which were divided into 5 groups, namely negative control, metformin, EDBP 100 mg/KgBW, EDBP 200 mg/KgBW and EDBP 300 mg/KgBB. The test animals were induced on a high-carbohydrate diet for 7 days and continued with the administration of each test substance for 1 week, then observed changes in body weight, blood sugar levels, kidney organ weight and histopathology of the rat kidney organs in the glomeruli and kidney tubules. Data processing was then analyzed using the One Way ANOVA test.

Results: All treatment groups given nutmeg pulp extract (EDBP) showed histopathological improvement in rat kidney glomeruli which was significantly different from the negative control group ($p < 0.05$). Meanwhile, in rat kidney tubules, the extracts from the EDBP 100 mg and EDBP 200 mg groups showed no significant difference from the metformin group ($p > 0.05$), while the EDBP 300 mg group showed a significant difference from the metformin group ($p < 0.05$).

Conclusion: Administration of ethanol extract of nutmeg flesh can improve the histopathological damage to the kidneys of hyperglycemic Wistar rats with an effective dose of 100 mg/KgBB and 200 mg/KgBB

Keywords: Nutmeg Pulp, Ethanol Extract, Hyperglycemic, Kidney Histopathology, *Myristica fragrans* Houtt