

ABSTRACT

Adelia Brilian Damayanti. 24020120130078. The Microanatomy Structure of Female Wistar Rat Kidney After Treated with Nanochitosan Preparation of Ethanolic Extract of Neem Leaves (*Azadirachta indica* A. Juss). Bachelor of Sains, Faculty of Science dan Mathematics, under the guidance of Teguh Suprihatin dan Agung Janika Sitasiwi.

Oral administration of drugs is limited absorption. An effort to improve capabilities drugs particle penetrates membrane and target cell properly is encapsulate drugs with nanochitosan. The purpose of this study was analyzed the effect of nanochitosan preparation of ethanolic extract of neem leaves on the microanatomy structure of female Wistar rat kidney. This study used completely randomized design (CDR). The test animals used were divided into 3 groups which 4 replications. Treatments was divided into negative control (P0), an ethanol extract of neem leaves 14 mg/kgBW (P1), and nanochitosan preparation of ethanolic extract of neem leaves 14 mg/kgBW (P2). The variabels measured were the kidney weight, glomerular diameter, Bowman's capsule diameter, Bowman space thickness, proximal tubule diameter, distal tubule diameter, water intake, and histological kidney structure damage. Data were analyzed with one way ANOVA with a 95% level of confidence ($p < 0,05$). The results of the ANOVA test which showed significant differences were followed by Duncan's further test. Histological structure damage was analyzed descriptively. The results of this study showed that nanochitosan preparation of ethanolic extract of neem leaves made no significant difference in glomerular diameter, and Bowman's capsule diameter ($p > 0,05$) and showed inflammatory cell infiltration. The conclusion of this study was that the oral administration of nanochitosan preparation of ethanolic extract of neem leaves has potential to protect the microanatomy structure of female Wistar rat kidney that indicated by maintaining normal glomerular diameter and Bowman's capsule diameter, and suppressing histological kidney structure damage in female Wistar white rats.

Keywords: *nanochitosan, neem, microanatomy, kidney*