# ABSTRACT

**Mirra Rodhiana Karimatul Amalia. 24020122130057.** Renal Histopathology of Wistar Rats (*Rattus norvegicus*) Treated with Green Meniran (*Phyllanthus niruri* L.) Leaf Extract and Cisplatin Induction. Under the supervision of Kasiyati and Rasyidah Fauzia Ahmar.

Cisplatin is a nephrotoxic chemotherapeutic agent that triggers renal tissue damage via free radicals, necessitating protective measures using exogenous antioxidants such as green meniran (*Phyllanthus niruri* L.). This study aimed to determine the degree of histological damage to the kidneys and the effective dose of green meniran extract as a protective agent in cisplatin-induced Wistar rats (*Rattus norvegicus*). The study employed a Completely Randomized Design with 4 treatments and 6 replications: P0 (normal control), P1 (cisplatin 7.5 mg/kg BW), P2 (meniran extract 200 mg/kg BW + cisplatin), and P3 (meniran extract 400 mg/kg BW + cisplatin). The extract was prepared using maceration and encapsulation methods. Rats were acclimated for 14 days, followed by oral administration of distilled water and meniran extract solutions for 15 days, while cisplatin dissolved in 0.9% NaCl was administered via intraperitoneal injection on day 10. Kidney isolation was performed on day 16 post-euthanasia, followed by tissue preparation using the paraffin method and hematoxylin-eosin staining. Variables observed included glomerular diameter and distribution, Bowman's capsule space distance, proximal and distal tubule diameters, drinking water consumption, relative kidney weight, and tissue damage scoring. Parametric data were analyzed using ANOVA and Duncan's post-hoc test, while scoring data were analyzed using the Kruskal-Wallis and Mann-Whitney tests. The results showed that meniran treatment and cisplatin induction influenced glomerular distribution, but the glomerular diameter did not differ significantly ($p > 0.05$). Cisplatin induction significantly triggered the expansion of Bowman's capsule space accompanied by parietal epithelial atrophy in P1, as well as distal tubule dilatation across treatments ($p < 0.05$). Analysis of kidney weight and water consumption showed non-significant differences ($p > 0.05$). Histological damage in the form of tubular epithelial cell necrosis and hyaline cast formation was still observed in P1, P2, and P3. In conclusion, the degree of renal histological structural damage was reduced by the administration of green meniran extract in some tissues, and the 200 mg/kg BW dose (P2) has potential as an initial nephroprotectant.

*Keywords: Glomerulus, nephroprotective, nephrotoxic, tubular dilation*