ABSTRACT

Reza Zaki Hesa Pratama. 24020122120041. **Protective Effect of Meniran Leaf Extract (*Phyllanthus niruri* L.) Against Cisplatin Toxicity in Pulmonary Microanatomy of White Rats (*Rattus norvegicus*)** under the guidance of Muhammad Anwar Djaelani and Silvana Tana.

Cisplatin is an effective chemotherapeutic agent; however, it causes toxic side effects in various tissues, including the lungs, through increased oxidative stress and inflammatory responses. Efforts to minimize cisplatin-induced tissue damage can be carried out using natural compounds with antioxidant activity, one of which is meniran leaf extract (*Phyllanthus niruri* L.). This study aimed to analyze the protective effect of meniran leaf extract against cisplatin-induced toxicity on the pulmonary microanatomy of male Wistar rats (*Rattus norvegicus*). The research was conducted in vivo using four treatment groups: control (P0), cisplatin 7,5 mg/kg (P1), cisplatin + meniran leaf extract 200 mg/kgBW (P2), and cisplatin + meniran leaf extract 400 mg/kgBW (P3). Observed variables included lung organ weight, histopathology of the bronchi, bronchioles, and alveoli, as well as pulmonary damage scores. Data were analyzed using ANOVA for organ weight and Kruskal-Wallis followed by Mann-Whitney tests for damage scores. The results showed that lung weight and relative lung weight between treatment groups showed no significant differences ($p > 0,05$), although there were histopathological changes visible microscopically. Pulmonary tissue damage scores with an average of P0 (1,1), P1 (3,9), P2 (1,9), and P3 (2,9) showed significant differences between treatment group variations, namely between P0 and P1 (0,019), P0 and P3 (0,020), and P1 and P3 (0,020). These findings indicate that meniran leaf extract at a dose of 200 mg/kgBW is able to provide a protective effect against pulmonary microanatomical damage in white rats induced with cisplatin intraperitoneally, while at a dose of 400 mg/kgBW it has the potential to cause a prooxidant effect that can guarantee tissue damage.

Keywords: *Antioxidants, Pulmonary histopathology, Oxidative stress*