

## ABSTRACT

Rafi Dwizena Anggoro. 24020122140131. **Microanatomical Response of White Rat (*Rattus norvegicus*) Spleen After Administration of Meniran (*Phyllanthus niruri* L.) Leaf Extract and Cisplatin Induction.** Supervised by Muhammad Anwar Djaelani and Silvana Tana.

Cancer is one of the leading causes of death in the world, and one of the commonly used therapies is chemotherapy with cisplatin, although effective, cisplatin can cause toxic effects on normal tissues, including the spleen, which is associated with increased oxidative stress and changes in the microanatomic structure of the tissue. Meniran plant (*Phyllanthus niruri* L.) contains flavonoid compounds that have antioxidant and immunomodulatory activities, so it has the potential as a protective agent against tissue damage. Various studies have reported that cisplatin can cause tissue damage and the use of natural ingredients as protective agents, however, studies specifically examining the potential of meniran extract (*Phyllanthus niruri* L.) in protecting the microanatomy of the spleen through a morphometric approach are still limited. Meniran is known to contain flavonoids that have antioxidant and immunomodulatory activities so it has the potential to protect tissue from damage due to oxidative stress. This study aims to analyze the protective effect of meniran leaf extract on the microanatomy structure of the spleen of white rats (*Rattus norvegicus*) induced by cisplatin. The study was conducted experimentally with four treatment groups, namely the control group, the cisplatin group at a dose of 7.5 mg/kg BW, and the combination group of cisplatin with meniran leaf extract at a dose of 200 mg/kg BW and 400 mg/kg BW. Data on absolute organ weight, relative organ weight, capsule thickness, white pulp diameter, and germinal center were tested using the One Way ANOVA test, scoring data were tested using the Kruskal-Wallis test. The results showed that cisplatin caused damage to the microanatomic structure of the spleen, administration of meniran leaf extract at a dose of 200 mg/kg BW was able to improve the microanatomic structure of the spleen, while a dose of 400 mg/kg BW still showed tissue damage, therefore, meniran leaf extract has the potential as a natural protective agent against cisplatin toxicity in spleen tissue, with effectiveness influenced by the dose of administration.

**Keyword:** *Antioxidant, flavonoid, histopathology, immunomodulator*