



Research article

Antinephrolithiasis effect of ethanol extract of *Phaleria macrocarpa* (Scheff.) boerl in male wistar rat

Aisyah Mentari¹, Urip Harahap¹, Panal Sitorus²

¹Department of Pharmacology, Faculty of Pharmacy, Universitas Sumatera Utara, Medan, Indonesia.

²Department of Pharmaceutical Biology, Faculty of Pharmacy, Universitas Sumatera Utara, Medan, Indonesia.

Key words: Calcium oxalate, Ethylene glycol, Nephrolithiasis, Flavonoids

***Corresponding Author:** Aisyah Mentari, Department of Pharmacology, Faculty of Pharmacy, Universitas Sumatera Utara, Medan, Indonesia.

Abstract

Objective: The aim of this research was to determine *in vitro* and *in vivo* antinephrolithiasis activity. **Methods:** *In vitro* nephrolithiasis activity was performed by incubating calcium oxalate and ethanol extract of *Phaleria macrocarpa* fruit at 37°C for six hours. *In vivo* test was induced by administration of 0.75% ethylene glycol and 2% ammonium chloride for 10 days and continued to ethanol extract of *Phaleria macrocarpa* fruit administration for 10 days then determined calcium oxalate concentration. **Results:** The *in vitro* results showed that ethanol extract of *Phaleria macrocarpa* significantly dissolved calcium oxalate. The *in vivo* result showed that ethanol extract of *Phaleria macrocarpa* fruit decrease calcium oxalate concentration of kidney at dose of 200 and 400mg/kg BW were significantly different ($P < 0.05$) to negative control. **Conclusion:** Ethanol extract of *Phaleria macrocarpa* fruit has antinephrolithiasis activity on *in vitro* and *in vivo*.