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PROTECTIVE EFFECTS OF ETHYL ACETATE FRACTION OF *Phaleria macrocarpa* (Scheff) Boerl. ON OXIDATIVE STRESS ASSOCIATED WITH ALLOXAN-INDUCED DIABETIC RATS

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ABSTRACT

Oxidative stress resulting from the increased production of reactive oxygen species plays a key role in the development of diabetes mellitus and its complications. *Phaleria macrocarpa*, a traditional plant from Indonesia, has been used empirically to control cancer, arthritis, and diabetes in society. The anti-diabetic effect and antioxidant activity of ethyl acetate (EtOAc) of *Phaleria macrocarpa* (PM) was investigated in alloxan-induced diabetic rats. After two weeks administration of PM, liver antioxidant enzyme and hyperglycemic state were evaluated. The result showed that EtOAc fraction treatments reduced blood glucose levels in diabetic rats by oral administration ($P < 0.05$). Serum glutamic-oxaloacetic transaminase (sGOT) and serum glutamic-pyruvate-transaminase (sGPT) also diminished by PM supplementation. The superoxide dismutase (SOD), catalase (CAT), and glutathione-peroxidase (GPx) activities, and glutathione (GSH) level in the alloxan-induced diabetic rats were decreased significantly ($P < 0.05$) compared with those in the normal rats but restored by EtOAc fraction treatments. The result of the present study concluded that the diabetic effect of EtOAc fraction of PM against alloxan-induced diabetic rats is mediated either by preventing the decline of hepatic antioxidant status or due to its indirect radical scavenging capacity.

Keywords: Ethyl acetate, Diabetic, Oxidative Stress, *Phaleria macrocarpa*