

Anti-hypercholesterolemic effect of Ethyl acetate extract from stem bark of *Artocarpus dasyphylla* toward *Rattus norvegicus* Wistar strain

Nanik Siti Aminah^{1*}, Alfinda Novi Kristanti¹, Lutfi Nia Kholida², St Khaerunnisa³

¹Dept. Of Chemistry, Faculty of Science and Technology, Universitas Airlangga, Surabaya

²Student of Magister Program of Chemistry, Faculty of Science and Technology,
Universitas Airlangga, Surabaya

³Dept. Of Biochemistry, Faculty of Medicine, Universitas Airlangga, Surabaya

*E-mail : naniksa2000@gmail.com

Abstract

Artocarpus dasyphylla with the local name “cempedak utan” is a member of *Artocarpus* Genus from Moraceae family. It is a rare and endemic plant from east region of Indonesia. The purpose of this study was to determine the antihypercholesterolemic effect of ethyl acetate extract from *A. dasyphylla* toward the level of total cholesterol, LDL, and HDL of hypercholesterolemic *Rattus norvegicus* as the prevention effort of atherosclerosis and CVD. It was due to antioxidant activities of phenolic compounds. The powder of stem bark of *Artocarpus dasyphylla* was extracted by maceration and partition method. Phenolic total of ethyl acetate extract from stem bark of *A. dasyphylla* was determined with Folin Ciocalteu reagent, it was 9,86 mg GAE/g of extract. In vivo experiment toward *Rattus norvegicus* with hypercholesterol diet used randomized post test only control group design. Ethyl acetate extract with the treatment doses 75, 150, 225 mg/kg body weight showed antioxidant activity by decreasing total cholesterol and LDL level to normal level. Paradox result occurred to HDL level, the level of HDL decreasing as the increase of dose of sample, but still above the threshold. The best anti-hypercholesterolemic activity was shown by treatment with the dose of ethyl acetate extract from stem bark of *A. dasyphylla* 150 mg/kg body weight of *Rattus norvegicus*.

Keyword: *Artocarpus dasyphylla*, antihypercholesterolemic effect, total cholesterol, LDL, HDL, *Rattus norvegicus*.

1. INTRODUCTION

Artocarpus is one of genus belong to Moraceae family beside *Ficus* and *Morus*. *Artocarpus* has at least 50 species and some are endemic of Indonesia. Several studies reported the biological activity of *Artocarpus*, such as antioxidant, antibacterial, antimalaria, antitubercular, antiviral, cytotoxic, antiplatelet, and antiinflammation [1].

Artocarpus dasyphylla or cempedak utan is a member of genus *Artocarpus* that is a rare and endemic plant from east region of Indonesia [2]. Phenolic compound had been isolated from dichloromethane extract of stem bark of *A. dasyphylla* were norartocarpetin, oxyresveratrol, catechin, and afzelechin-3-O-rhamnosida [3]. Based on the toxicity test toward *Artemia salina* Leach, the phenolic compounds from ethyl acetate and chloroform extract of *A. dasyphylla*'s stem bark were non-toxic[2].