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INHIBITORY EFFECT OF ETHANOLIC EXTRACT OF Psidium guajava LEAVES IN RAT ACTIVE CUTANEUS ANAPHYLAXIS REACTION

6. Abstract

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Research Article

Inhibitory Effect of Ethanolic Extract of *Psidium guajava* Leaves in Rat Active Cutaneus Anaphylaxis Reaction

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ABSTRACT

Psidium guajava is a plant that grows widely in some areas of Indonesia which have been proven as an antioxidant and anti-inflammatory. The aims of this study was to evaluate the effects of ethanolic extract of *Psidium guajava* (EEPG) leaves on active cutaneous anaphylaxis reaction induced by ovalbumin. This study used wistar male rats were divided into 5 groups (n = 5). Each group was induced by ovalbumin (OVA) and Al(OH)3 on the days of 0 and 7, and finally were challenged by ovalbumin on the day of 14 to induce active cutaneous anaphylaxis reaction. Cromolyn sodium was used as standard drug. EEPG with dose of 250mg/kgBW, 500mg/kgBW, and 750mg/kgBW were given orally at day 14. In order to determine the mast cells on the inflammation tissues, the specimens were stained with Toluidine blue. The results showed that EEPG leaves at the doses of 250, 500 and 750 mg/kg BW could inhibit the pigmentation area of vascular permeability on rats skin, significantly with controll group ($p<0,05$), but still lower than cromolyn sodium. Histopathologically, EEPG leaves had inhibitory effect on mast cell degranulation process. It indicated that the EEPG leaves had inhibitory effect on active cutaneous anaphylaxis reaction.

Keywords: *Psidium guajava*, anaphylaxis reaction, ovalbumin

INTRODUCTION

Allergic disease is a common disease incommunity, and is still a health problem because of its recurency. Allergic reactions are IgE-mediated immune response against foreign substances that enter the body[1]. There were various plants which can be used as antiallergy. The use of herbal medicine has increased in recent years. One of plants that have the potential to be developed as antiallergy is guava plant (*Psidium guajava*). Guava contained tannins, phenolic compounds, flavonoids, volatile oil, sesquiterpenes and triterpenoids[2]. Flavonoids and phenolic compounds contained in guava have been proven as an antioxidant and anti-inflammatory. Several studies have of *P. guajava* leaves extract in alergy disease. Han *et al.*[3] reported that *Psidium guajava* inhibited chemokine (TARC/CCL17) expression on keratinosits. *Psidium guajava had supressed* IgE, TNF-α dan IL-4 level on dermatitis induced 2,4-dinitrochlorobenzene (DNCB)[4] Han et al.[5], studied that ethyl acetate extract of *Psidium guajava* inhibited inflammatory cytokine production and FcεRI-dependent signaling. Guava leaves (*Psidium guajava*) had the potential to be developed as antiallergy. The present study aimed to evaluate the *Psidium guajava* leaves in active cutaneus anaphylaxis rat model, especially with reference to the mast cell stabilizer drug, Cromolyn Sodium was used as a reference drug in this study.

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