

Quantitative analysis of Quercetin in various parts of Phaleria macrocarpa(Scheff.) Boerl extracts

Abstract

Phaleria macrocarpa, which is also known as Mahkota Dewa, is one of native Indonesian plants. There are a number of findings associate this plant with anti-oxidant, anti-microbial, and anti-cancer attributes. This study is the first stage of ongoing research to perform phytochemical analysis and to identify the antimicrobial property of P. macrocarpa against pathogenic bacteria and yeast. In particular, quantitative analysis of flavonoids of various parts of P. macrocarpa was the main purpose of this study. Phytochemical screening of P. macrocarpa leaf, stalk, fruit, and seed showed the existence of flavonoid. The amounts of flavonoid quercetin in various parts of P. macrocarpa has been determined by reversed-phase high-performance liquid chromatography (RP-HPLC) with UV detection using 15cm × 4.6 mm, 10 µm particle, Ascentis™ C18 column. The quantitative analysis of quercetin of P. macrocarpa crude extracts revealed that stalk contained the highest amount of quercetin ($1670.40 \pm 13.48 \mu\text{g ml}^{-1}$), followed by fruit ($1426.72 \pm 22.17 \mu\text{g ml}^{-1}$), leaf ($494.47 \pm 30.46 \mu\text{g ml}^{-1}$), and seed extracts ($313.22 \pm 61.81 \mu\text{g ml}^{-1}$). The presence of phytochemicals in P. macrocarpa may be responsible for its anti-microbial and anti-oxidant activities and may serve as a substitute for synthetic drugs.