

Anticoagulant activity of polyphenolic-polysaccharides isolated from *Melastoma malabathricum* L.

ABSTRACT

Melastoma malabathricum Linn. is a perennial traditional medicine plants that grows abundantly throughout Asian countries. In this study, *M. malabathricum* Linn. leaf hot water crude extract with anticoagulant activity was purified through solid phase extraction cartridge and examined for the bioactive chemical constituents on blood coagulation reaction. The SPE purified fractions were, respectively, designated as F1, F2, F3, and F4, and each was subjected to the activated partial thromboplastin time (APTT) anticoagulant assay. Active anticoagulant fractions (F1, F2, and F3) were subjected to chemical characterisation evaluation. Besides, neutral sugar for carbohydrate part was also examined. F1, F2, and F3 were found to significantly prolong the anticoagulant activities in the following order, F1 > F2 > F3, in a dose dependent manner. In addition, carbohydrate, hexuronic acid, and polyphenolic moiety were measured for the active anticoagulant fractions (F1, F2, and F3). The characterisation of chemical constituents revealed that all these three fractions contained acidic polysaccharides (rhamnogalacturonan, homogalacturonan, and rhamnose hexose-pectic type polysaccharide) and polyphenolics. Hence, it was concluded that the presence of high hexuronic acids and polysaccharides, as well as polyphenolics in traditional medicinal plant, *M. malabathricum*, played a role in prolonging blood clotting in the intrinsic pathway.

Keyword: *Melastoma malabathricum* Linn.; Blood coagulation; Polyphenolic-polysaccharides; Anticoagulant