ABSTRACT

Determination of Antimalarial Active Fraction from *Artocarpus sericicarpus* Stembark Dichloromethane Extract with the Target on *Malate Quinone Oxidoreductase Plasmodium falciparum* (*Pf*MQO)

Lutfa Qurrota A'yun

Malaria is an infectious disease that still endemic in Indonesia. Exploration of active ingredients from nature is one of the approaches in finding new antimalarials. *Artocarpus sericicarpus* stembark dichloromethane extract has previously been reported as a potential antimalarial drug. The aim of this study is to obtain an active antimalaria fraction of *A. sericicarpus* stembark dichloromethane extract with the target inhibition on *Malate Quinone Oxidoreductase Plasmodium falciparum* (*Pf*MQO). Stembark of *A. sericicarpus* was extracted using an ultrasonic-assisted extraction method with n-hexane, dichloromethane, and methanol solvents. Fractionation of A. *sericicarpus* stembark dichloromethane extract was conducted by open column chromatography method. The antimalarial assay was determined using LDH assay against *P. Falciparum* and MQO assay to determine target inhibition of the MQO enzyme. There are 12 fractions of A. *sericicarpus* stembark dichloromethane extract, fraction-3,4,5,6,7,8 and 12 has antimalarial activity IC_{50} <5 µg/mL with strong active category. Fraction-6 has the highest potential antimalarial drug, inhibition concentration (IC_{50}) against *P. falciparum* at 1.53 ± 0.04 µg/mL and has the ability to inhibit MQO enzyme at 6.42 ± 0.03 µg/mL. Fraction-6 contains flavonoid, polyphenol, and terpenoids compound which provides the antimalarial activity. An MQO assay for fraction-3,4,5,7,8,12 is required, subfractination and isolation of fraction-6 is recommended to obtain new antimalarial compounds by inhibiting MQO enzyme in mitochondria.

Keywords: Antimalarial, *Artocarpus sericicarpus*, LDH, MQO, *Plasmodium falciparum*.