

ABSTRACT

Determination of Active Antimalarial Fraction from *Melicope triphylla* Leaf N-Hexane Extract with Targeted Inhibitors in the Enzyme *Mallate Quinone Oxidoreductase Plasmodium falciparum*

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Malaria is an infectious disease caused by *Plasmodium* which is transmitted through the bite of a female *Anopheles* mosquito. In Indonesia, Papua and West Papua are malaria endemic areas with highest Annual Parasite Incidence. That situation is getting worse because of the resistance from antimalarial drugs. MQO enzyme is a new target site for malaria treatment. Based on previous research data, it is known that the n-hexane extract of *M.triphylla* leaves is active as an antimalarial with a mechanism of inhibiting the *PfMQO* enzyme with an IC₅₀ value of 7.49 µg/mL. The study aims to find an active fraction of n-hexane extract of *M.triphylla* leaves. Extract fractionation process was carried out by column chromatography method and produced seven fractions. Antimalarial testing of seven fractions was carried out using two methods namely cell base (*LDH assay*) and enzymatic base (MQO enzyme). *LDH assay* results show that F6 has the highest antimalarial activity with an IC₅₀ value 2,54 ± 0,04 µg/mL and from the results of the MQO enzymatic method it was found that F6 had the activity of inhibiting the MQO enzyme with an IC₅₀ value 14,73 ± 0,03 µg/mL. The fraction was followed by phytochemical screening, and from phytochemical screening it was found that F6 contained terpenoids and polyphenols known as active antimalarial compounds.

Keywords: *M.triphylla*, antimalarial, *LDH assay*, MQO, fraction