ABSTRACT

STUDY OF *IN VITRO* ANTIMALARIAL ACTIVITY IN *MELICOPE GLABRA* Blume. AND *LUVUNGA SCANDENS* (Roxb.)Wight. PLANTS GROWN IN BOTANICAL GARDEN OF BALIKPAPAN, EAST BORNEO

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Malaria is one of the health problem in Indonesia caused by the infection of red blood cell due to parasite *Plasmodium falciparum*. The problem of antimalarial drug resistance encourages the discovery of new antimalarial drugs, mainly derived from plants. This study is carried out to investigate the antimalarial activity *in vitro* of two plants, the hexane, dicloromethane, and methanol extract of leaves and stembarks of *Melicope glabra* Blume. and *Luvunga scandens* (Roxb.)Wight. (Rutaceae), which obtained from the exploration in Botanical Garden of Balikpapan, East Borneo. Phytochemical screening from the extract is performed to determine the presence of the phytochemical constituent such as alkaloids, terpenoids, flavonoids, polyphenols, and anthraquinone. This study used the enzyme-linked immunosorbent assay (ELISA) method with histidine-rich protein II (HRP II) measurement and microscopic method with giemsa for screening the *in vitro* antimalarial activity. Based on the clustering percentage of inhibition, There are nine active extracts on ELISA and microscopic method that are dichloromethane and methanol extract from *Melicope glabra* leaf, n-hexane and dichloromethane extract from *Melicope glabra* stembark, n-hexane, dichloromethane and methanol extract from *Luvunga scandens* leaf, n-hexane and dichloromethane extract from *Luvunga Scandens* stembark. There are two active extracts on microscopic method but not active on ELISA method that are n-hexane extract from *Melicope glabra* leaf and methanol extract from *Melicope glabra* stembark. Also there is one inactive extract on both methods that is methanol extract from *Luvunga scandens* stembark. Based on the results of phytochemical screening, extract which has the highest activity on ELISA and microscopic method that is n-hexane extract from *Luvunga Scandens* stembark contains compound of terpenoids.

Keywords : Malaria, Rutaceae, *Melicope glabra* Blume., *Luvunga scandens* (Roxb.)Wight., Phytochemical Screening, ELISA HRP II, Microscopic method.