

Antiplasmodial activity of methanolic leaf extract of mangrove plants against *Plasmodium berghei*

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Objective: Malaria is a mosquito-borne disease caused by parasitic protozoa from the genus of *Plasmodium*. The protozoans have developed resistance against many of current drugs. It is urgent to find an alternative source of new antimalarial agent. In the effort to discover new antimalarial agents, this research has been conducted on Jambi mangrove plants. This study was conducted to evaluate the antiplasmodial properties of Jambi mangrove plants.

Material & Methods: This study has been conducted by screening antiplasmodial bioactivity of methanol leaf extract of mangrove plants against *Plasmodium berghei*. Antiplasmodial activity from methanol leaf extract of mangrove plants, namely *Sonneratia alba*, *Acanthus ilcifolius*, and *Sonneratia caseolaris* were tested *ex vivo* against *Plasmodium berghei* strain ANKA infected into

Balb-C mice. Antiplasmodial activity were observed by calculating the parasitaemia percentage of *Plasmodium berghei* in mice red blood cells at 0 and 24 hours and expressed as decreased levels of parasitaemia and percent of inhibition.

Results: Based on the decrease of parasitaemia level and the percent of inhibition value, the three methanol leaf extracts of mangrove plants (*Sonneratia alba*, *Acanthus ilcifolius*, and *Sonneratia caseolaris*) concluded to have potential antimalarial activity. The highest activity showed by the methanol leaf extract of *Sonneratia alba* with percent inhibition as much as 48.5; 44.9; 42.7 and 18.8% at concentrations of 300, 100, 10 and 3 µg/ml. Antiplasmodial activity can also be studied from the inhibition of the development life cycle of plasmodium. Methanol leaf extract of *Sonneratia alba* have activity in inhibiting the development ring stage to which schizonts were not found at the extract concentration of 300 µg/mL. At lower concentration, trophozoite and schizonts still survived with defect morphological conditions.

Conclusion: The results of this study indicated that mangrove plant *Sonneratia alba* was a potent source of natural antimalarial drugs.

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