

***Piper Sarmentosum* Leaf As a Promising Non-Toxic Antimalarial Agent Against *Plasmodium berghei* NK65-Induced Mice**

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ABSTRACT

As the most threatening human parasitic disease, the malarial etiological agents were reported to be resistant against nearly all antimalarial drugs. On top of that, *Piper sarmentosum* is widely applied as alternative medicine and in ethnopharmacological studies. This study was done to evaluate the antimalarial properties of aqueous extract of *P. sarmentosum* against *Plasmodium berghei* NK65 and to demonstrate how the manipulation of this natural planted vegetable promisingly can solve a manifestation of malaria in animal model. By using the four days suppression test (4DST) method in *P. berghei* NK65-infected ICR male mice (25-30 g, 6-8 weeks old), the mice were intraperitoneally (i.p) infected with 0.1 mL of 1.0×10^7 parasitized red blood cells (RBC) before being orally given pre- and post-infection treatments with 0.2 mL of 100 mg/kg body weight (bw) of freeze-drying undergoes aqueous *P. sarmentosum* extract. The thin blood smear was microscopically examined and measured. The results showed that the mice treated with 0.2 mL of 100 mg/kg bw *P. sarmentosum*-dH₂O extract at 14 days pre-infection treatment were recorded 83.6 % of inhibition rate and 50 % of the mice in this group had survived for more than 7 months post-infection. Besides, there was also a positive correlation ($p \leq 0.05$, $n = 6$) for all assessed parameters; parasitemia density (%), survival time (day) and the ability to inhibit the parasite growth (%) between pre-treated infected mice with the other groups. However, the value recorded was still lower compared with the mice treated with primaquine and chloroquine. The results for biochemical tests were positively situated in the normal ranged level. Histologically, no abnormalities and injuries were found on the selected vital organs. This study significantly evidenced that *P. sarmentosum* could be manipulated as a potential antimalarial alternative drug for the preservation and welfare of human being.

Keywords: *Piper sarmentosum*; *Plasmodium berghei* NK65; 4DST; Antimalarial; ICR strain mice.

