

عنوان مقاله:

Antimalarial activity of extract and fractions of *Castanopsis costata* (Blume) A.DC

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خلاصه مقاله:

Objective: One of the biggest health problems in the world, which occurs in more than 90 countries, is the spread of malaria. Cep-cepan leaves (*Castanopsis costata*), was empirically used as an antimalarial herb in North Sumatra. Since its use has not been scientifically studied, we investigated the antimalarial activity of extract and fractions of *C. costata* against *Plasmodium berghei* ANKA (PbA) in a mouse model. Materials and Methods: This experimental study was conducted using 32 male Balb/C mice. PbA inoculation was performed intraperitoneally with 106 parasites/mouse. Immediately after parasitemia reach > 2% (day 0), the mice were treated orally with daily artesunate (36.4 mg/kg/day) (positive control), ethanolic extract (100, 200, and 400 mg/kg/day), and the fractions of water, ethyl acetate and n-hexane (108 mg/kg/day each) for 5 consecutive days (from day 0 to 4). Parasitemia inhibition was observed to determine the antimalarial activity of each type of *C. costata* extract and fractions. Results: The administration of *C. costata* leaves ethanolic extract (100, 200, and 400 mg/kg) significantly inhibited the growth of PbA in Balb/C mice (42.66%, 66.2 1% and 80.99 % inhibition, respectively) ($p < 0.05$). Similarly, all *C. costata* fractions also produced antimalarial activity against PbA with administration of the ethyl acetate fraction presenting the highest activity (79.85 % inhibition). Conclusion: The *C. costata* leaves showed antimalarial activity against PbA. However, further studies are necessary to elucidate the underlying mechanisms of this effect and the active compounds involved. Our current study revealed that *C. costata* could be a potential candidate to be used as a new antimalarial drug.

کلمات کلیدی:

Malaria, *Castanopsis costata*, Antimalarial drugs, *Plasmodium berghei*

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