

IN VITRO RESPONSE OF *Plasmodium falciparum* TO
CHEMICAL CONSTITUENTS ISOLATED FROM
THAI MEDICINAL PLANTS

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OBJECTIVE : To identify and chemically isolate components of Thai Medicinal Plants exhibiting an inhibitory effect on *in vitro* growth of *Plasmodium falciparum*.

BACKGROUND : Numbers of Thai Medicinal Plants are specified for treatment of malaria infection in Folk Medicine. Thai villagers residing in various endemic areas throughout Thailand are familiar with these plants and use them for alleviating symptoms of malaria. During World War II, due to the shortage of synthetic antimalarials, Thai Medicinal Plants played an important role in self treatment of malaria.

In 1950, clinical trials (1) on treatment of *P. vivax* and *P. falciparum* infected patients with preparations of various Thai Medicinal Plants confirmed the schizontocidal effect of a number of these plants. To date, there have been no further reports published concerning the antimalarial activity of the components or the chemical characterization of their active substances.

METHODS : The *in vitro* cultivation system described previously (2) is used for comparison of the parasitic growth. Water and alcoholic extracts prepared from dry powder of either the stem, bark, whole plant or roots of five different local Medicinal Plants are included in the culture system in comparison with standard antimalarials. Evaluations of the schizontocidal effect are determined by parasite count made on Giemsa stained thin smears taken at beginning and the end of the experiment.

RESULTS : An evaluation of *in vitro* effects of the plant extracts on the freshly collected *P. falciparum* is in progress. Further chemical isolation of the different constituents will be performed on the plant extract exhibiting the activity that inhibits parasitic growth. The individual chemical substance isolated from the crude preparation will then be retested to identify the component possessing schizontocidal activity.

REFERENCES :

1. Ketusingh, O. : Report on Experimental Antimalarial Therapy of Thai Medicinal Plants. Proceedings of the Siriraj 60th Anniversary Meeting, April, 275-281, 1950.

2. Iber, K.P., et al. : Evaluation of In vitro Drug Sensitivity of Human Plasmodium falciparum by Incorporation of Radioactive Isoleucine. J. Med. Ass. Thailand 58: 559-566, 1975.