

In-vitro antiplasmodial activity of alkaloids isolated from the roots of *Pleiocarpa mutica*

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A methanolic extract of the roots of *Pleiocarpa mutica*, a species used traditionally for fever treatment was found to have appreciable antiplasmodial activity in vitro (Addae-Kyereme and Wright, 1997).

We report on the subsequent evaluation of some alkaloids isolated from this extract.

Alkaloids were isolated by column chromatography of the methanolic extract over silica gel eluting with solvents of increasing polarity.

Inhibition of growth of *Plasmodium falciparum* (K1 strain) was determined by measuring parasite lactate dehydrogenase activity (Knobloch and Henk, 1995).

The mass spectra of Pm1, Pm2, Pm3, Pm4 and Pm5 were consistent with those of pleiocarpine, pleiocarpinine, 15-(14'-Eburnamyl)pleiocarpinine, pleiocarpamine and eburnamine respectively. Pm6 has not yet been identified.

Only Pm3 and Pm4 showed significant antiplasmodial activity. These results suggest that these alkaloids which are minor constituents account at least in part for the activity of the methanolic extract ($IC_{50} = 16.5 \mu\text{g/ml}$).

Table 1. Antiplasmodial activities of alkaloids from *P. mutica* roots and standard drugs

Alkaloid*/Drug	IC_{50} ($\mu\text{g/ml}$)
Pm1 (396)	>50
Pm2 (352)	>50
Pm3 (630)	3.4
Pm4 (322)	4.0
Pm5 (296)	30
Pm6 (378)	>50
Chloroquine diphosphate	0.23
Artemisinin	0.01

*Figures in brackets are the molecular weights of alkaloids.

Further work is being done to confirm the identities of the alkaloids and also to determine the nature of any interactions (synergism/summation) that may exist between the various alkaloids found in the extract.

References

- Addae-Kyereme, J. and Wright, C.W. (1997) *J. Pharm. Pharmacol.*, **49** Suppl. 4:210
 Knobloch, J. and Henk, M. (1995) *Trans. R. Soc. Trop. Med. Hyg.*, **89**: 269-270