

Antimalarial activity of methanolic extracts from plants used in Kenyan ethnomedicine and their interactions with chloroquine (CQ) against a CQ-tolerant rodent parasite, in mice.

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Abstract

Methanolic extracts from 15 medicinal plants representing 11 families, used traditionally for malaria treatment in Kenya were screened for their in vivo antimalarial activity in mice against a chloroquine (CQ)-tolerant *Plasmodium berghei* NK65, either alone or in combination with CQ. The plant parts used ranged from leaves (L), stem bark (SB), root bark (RB), seeds (S) and whole plant (W). When used alone, extracts from seven plants, *Clerodendrum myricoides* (RB), *Ficus sur* (L/SB/RB), *Maytenus acuminata* (L/RB), *Rhamnus prinoides* (L/RB), *Rhamnus staddo* (RB), *Toddalia asiatica* (RB) and *Vernonia lasiopopus* (RB) had statistically significant parasitaemia suppressions of 31.7-59.3%. In combination with CQ, methanolic extracts of *Albizia gummifera* (SB), *Ficus sur* (RB), *Rhamnus prinoides* and *Rhamnus staddo* (L/RB), *Caesalpinia volkensii* (L), *Maytenus senegalensis* (L/RB), *Withania somnifera* (RB), *Ekebergia capensis* (L/SB), *Toddalia asiatica* (L/RB) and *Vernonia lasiopopus* (L/SB/RB) gave statistically significant and improved suppressions which ranged from 45.5 to 85.1%. The fact that these activities were up to five-fold higher than that of extract alone may suggest synergistic interactions. Remarkable parasitaemia suppression by the extracts, either alone or in combination with CQ mostly resulted into longer mouse survival relative to the controls, in some cases by a further 2 weeks. Plants, which showed significant antimalarial activity including *Vernonia lasiopopus*, *Toddalia asiatica*, *Ficus sur*, *Rhamnus prinoides* and *Rhamnus staddo* warrant further evaluation in the search for novel antimalarial agents against drug-resistant malaria.

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