



Phytochemical isolation of compounds from *Sceletium tortuosum* and activity testing against *Plasmodium falciparum*

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Malaria is a major health care problem in tropical regions due to the increasing resistance of *Plasmodium falciparum* against widely available antimalarial drugs. Traditional societies relied on medicinal plants to treat parasitic infections. As a result, drugs like quinine and artemisinin were isolated from herbs and barks (Varughese *et al.* 2010). *Sceletium tortuosum* has been used as medicine for social and spiritual purposes by San hunter gatherers and Khoi pastoralists. *Sceletium tortuosum* is rich in alkaloids, one of the important classes of natural product producing treatment for parasitic infections (Kayser *et al.* 2002).

Laboratory preparation of extracts of fresh *S. tortuosum* plant material was conducted mimicking traditional methods of preparation using organic solvents. Mesembrine was isolated from a methanol extract using conventional column chromatography. Sixteen extracts and mesembrine were evaluated for antiplasmodium activity using a plasmodium lactate dehydrogenase culture sensitivity assay with chloroquine as reference drug.

Of the sixteen extracts, four showed activity against *P. falciparum* with IC₅₀ ranging between 1.47 µg/mL and 7.32 µg/mL. Extracts prepared from stored material at -20 °C showed no antiplasmodium activity. The four originally active extracts were re-screened six months later, but the antimalarial activity could not be reproduced. To determine discrepancy in biological results, chemical profiling of the extracts was done using high performance liquid chromatography technique. Differences were observed in the profiles of the active extracts when compared to those of stored plant material.

The instability of plant constituents observed could be a result of plant storage suggesting that the plant is best used when fresh.