

Abstract

The 1:1 MeOH/CH₂Cl₂ extract of aerial parts of *Sphaeranthus bullatus*, an annual herb native to tropical East Africa, showed activity against chloroquine sensitive D6 (IC₅₀ 9.7 μg/ml) and chloroquine resistant W2 (IC₅₀ 15.0 μg/ml) strains of *P. falciparum*. Seventeen secondary metabolites were isolated and evaluated for their in-vitro antiplasmodial, antileishmanial and anticancer activities revealing activity on four carvotacetone derivatives 1-4; with antiplasmodial activity of IC₅₀ 3.4, 0.6, 0.8, 1.4 μg/ml respectively against D6 strains of *P. falciparum*; antiplasmodial activity of IC₅₀ 2.8, 0.7, 0.9, 2.0 μg/ml respectively against W2 strains of *P. falciparum*; antileishmanial activity of IC₅₀ 17.0, 0.7, 3.0 and 0.7 respectively against the parasite *L. donovani*, and anticancer activity of IC₅₀ <5.3 μg/ml against SK-MEL, KB, BT-549 and SK-OV-3 cells for 2-4. In addition, cytotoxicity of the active compounds was evaluated against monkey kidney fibroblasts (VERO) and pig kidney epithelial (LLC-PK11) cells.