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 9.7µg/ml) and chloroquine resistant W2 (IC50 15.0µg/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, 1.4µg/ml respectively against D6 strains of P. falciparum; antiplasmodial activity of IC50 2.8, 0.7, 0.9, 2.0µg/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. donovanii, and anticancer activity of IC50 <5.3µg/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.