

ABSTRACT

There is generation of Reactive oxygen species (ROS) during malarial infection and antioxidants would contribute towards limiting these oxidative damage. Flavonoids which are the main phytochemical feature of *Dodonaea* species, display antiplasmodial activities which could be attributed to their radical scavenging activities (RSA). There is speculation that the antiplasmodial activities pure compounds could be due to the ability of the phenolic compounds to wipe out reactive oxygen species (ROS) generated in different stages of malaria infection. In this study the RSA and antiplasmodial activity of pure compounds from *Dodonaea angustifolia* and *Senecio roseiflorus* was compared. This was to ascertain whether there is a correlation between antiplasmodial activity and RSA. The crude extract and the pure compounds were assayed using an automated micro-dilution technique to determine 50 % growth inhibition of cultured parasites. Two strains (chloroquine sensitive Sierra Leone I (D6) and chloroquine-resistant Indo-china I (W2)) of *Plasmodium falciparum* parasites were used. Radical scavenging test was done using 1,1-diphenyl-2-picrylhydrazyl (DPPH) where the scavenging activities of the samples were measured as the percentage decrease in absorbance (at 517 nm) of DPPH radical after mixing the sample with this radical. The compounds tested showed antiplasmodial activities between 7.6 and 23.6 μ g/ml. The diterpenoids tested showed no RSA activity at all as expected. The flavonol, kaempferol was found to be the most active with % RSA of 96.8 at 50 μ M followed by 3,5,4'-trihydroxy-7-methoxyflavone. The structure-activity relationship showed that flavonols had appreciable activity as compared to 3-methoxy flavones indicating the importance of the hydroxyl group at the C-3 position. Some flavonoids exhibited both antiplasmodial and radical scavenging activities although there was no clear relationship between the activities. There seems to be additional factors other than antioxidant activities that would be contribute to antiplasmodial activity of compounds.