

4th International Conference and Exhibition on

Natural Products Medicinal Plants & Marine Drugs

June 11-12, 2018 | Rome, Italy

Phytochemical investigation, antibacterial and antioxidant activities of compounds from *Erythrina brucei*

Getahun Tadesse Gurmessa, R R T Majinda and I B Masesane
Ethiopia

The aim of this study was to carry out phytochemical investigation on *Erythrina brucei*, a plant endemic to Ethiopia, and analyze antibacterial and antioxidant properties of compounds isolated from it. Phytochemical investigations on stem bark, root bark and twigs of *Erythrina brucei* yielded 23 compounds. The isolated compounds fall into different classes that include pterocarpanes, isoflavanones, isoflavones, alkaloids, terpenes, stigmasterol, a long chain aliphatic alcohol and sugar. Of these, two isoflavanones were isolated for the first time, namely: (3S)-5,7-dihydroxy-2',5'-dimethoxy-6",6"-dimethyldihydropyrano[2",3":3',4'] isoflavanone erybrucein A and (3S)-5, 7-dihydroxy-2'-methoxy-6", 6"-dimethyldihydropyrano[2", 3":3, 4']isoflavanone erybrucein B. The rest are either new to the species, new to the genus or have been re-isolated. The structures of the compounds were determined using mass spectrometry and 1-D and 2D-NMR spectroscopy. Furthermore, Circular dichroism (CD) spectroscopy was used to determine the stereochemistry of chiral compounds. The antibacterial efficacy and anti-oxidant properties of some selected compounds including the new ones were determined. The new isoflavanone erybrucein B showed promising antibacterial activity against *B. cereus* (Gram positive bacteria) (MIC=0.062 mg/ml) compared to the reference standard antibiotic (chloramphenicol). On the other hand, the radical scavenging properties of some isolates were evaluated using the DPPH assay methods and compounds eryvarin J and erycrisagallin demonstrated good antioxidant activity compared to reference standard trolox, with IC₅₀ value of 1.4, 1.1 and 0.6 µg/ml, respectively.

getahun.tadesse@gmail.com