



Medicinal use and chemistry of *Erythrina brucei* (a medicinal plant of Ethiopian).

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Abstract:

Erythrian brucei is a tree grown only in Ethiopia. It grows up to the eight of 15-20 m long with colorful flowers. In different parts of the country the root and stem bark of this plant is used to treat ear infection and other diseases. Previous studies revealed that the flower and seed of *E. brucei* contain biologically active alkaloids; however, there was no report for the non-alkaloidal constituents of this plant. Recently, however, we did a comprehensive phytochemical investigation on root bark, stem bark and twigs of the plant concentrated on nonalkaloidal compounds. In the study we isolated biologically significant compounds and come up with new compounds which were not isolated so far from the nature and different co-metabolites. The identities of the compounds were established based on spectrometric

and spectroscopic analysis including MS, 1D and 2D NMR. Resazurin based antibacterial minimum inhibitor concentration (MIC) and DPPH antioxidant assay were carried out on some selected compounds using standard references chlorophenicol and trolox respectively. The tested compounds showed promising antibacterial activity up to (IC₅₀ = 0.0625 mg/mL) and antioxidant activity (IC₅₀ = 1.1 μg/mL) comparable to standard references.

Background:

Getahun Tadesse Gurmessa was born in west Oromia, Ethiopia, in 1983. He received his B. Ed. (in chemistry) and M. Sc. (Organic Chemistry) degrees from Jimma University, in 2008 and 2011, respectively. After working at position of lecturer at Jimma University chemistry department from July 2011 to August 2014, he enrolled for his PhD degree at University of Botswana chemistry department. He has completed his PhD in 2018 under the direct supervision of Prof. R.R. T. Majinda. His PhD research work was on isolation of plant metabolites with biological importance. He has published his papers in peer-reviewed journals. His main areas of research interest are Natural product chemistry and organic synthesis. He is a member of Ethiopian chemical society and Oromo society of sciences and technology. Currently Dr. Getahun Gurmessa is working as Assistant professor of organic chemistry at chemistry Department Wollega University, Ethiopia.