

Isolation and structural elucidation of natural products in *Euphorbia erythradenia*

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Background and Aims: The genus *Euphorbia* is the largest in the plant family Euphorbiaceae, comprising more than 2000 species. Over 70 species of *Euphorbia* are so far reported from Iran, out of which 17 species are native. Studies on Iranian *Euphorbia* indicates that these plants contain secondary metabolites such as diterpenoids with myrsinane skeletons, flavonoids, tannins, sterols, mono-, sesqui- and triterpenoids etc, which have interesting biological activities. Diterpenoids, from Iranian *Euphorbia* species have some biological activity such as skin-irritating, tumor-promoting, co-carcinogenic, analgesic, DNA-damaging activity, enzyme inhibition, etc. In this study *Euphorbia erythradenia*, endemic specie growing in Iran, is investigated for its chemical constituents.

Methods: The aerial part of the plant after grinding was extracted with dichloromethane and methanol. The two extracts were combined and divided into three different phases (n-hexane, ethyl acetate and water) using liquid-liquid extraction. The hexane layer of the plant extract was subjected to different chromatography systems including column-, flash column- and thin layer-chromatography on various stationary and mobile phases. The molecular structures of the purified compounds were determined by spectroscopic methods including ¹H NMR, ¹³C NMR, MS, IR.

Results: Two cycloartane triterpenoids as the major constituents of the plant in addition to β -sitosterol, β -sitosterol glycoside, and a lipid-glycoside were among the identified compounds.

Conclusions: The plant can be used as a new source for isolation of the cycloartane triterpenoids and steroids.

Keywords: **Keywords:** Euphorbiaceae; *Euphorbia erythradenia*; Cycloartane triterpenoids; β -sitosterol