Triterpene Saponins from *Calendula arvensis*

Hasan Kırmızibekmez\(^a\), Carla Bassarello\(^b\), Sonia Piacente\(^b\), Cosimo Pizza\(^b\), and İhsan Çalış\(^a\)

\(^a\) Department of Pharmacognosy, Faculty of Pharmacy, Hacettepe University, TR-06100, Ankara, Turkey
\(^b\) Department of Pharmaceutical Sciences, University of Salerno, Via Ponte Don Melillo 84084, Fisciano-Salerno, Italy

Reprint requests to Prof. Dr. İhsan Çalış. Fax: +90 312 311 4777. E-mail: icalis@hacettepe.edu.tr


From the aerial parts of *Calendula arvensis* a new triterpene saponin arvensoside C (1) was isolated together with four known triterpene saponins. The aglycon moieties had the oleanane skeleton for all of them. Three known flavonol glycosides, isorhamnetin 3-\(O\)-\(β\)-D-glucopyranoside, quercetin 3-\(O\)-\(β\)-D-glucopyranoside and quercetin 3-\(O\)-\(β\)-D-galactopyranoside were also obtained and characterized. Their structures were elucidated by 1D and 2D NMR experiments including 1D-TOCSY, DQF-COSY, HOHAHA, HSQC and HMBC spectroscopy as well as HRESIMS analysis.

**Key words**: *Calendula arvensis*, Asteraceae, Triterpene Saponins, Arvensoside C, Flavonol Glycosides