



Two new tropolonic alkaloids from *Colchicum speciosum* Steven bulbs

S. Tayyeb^{1*}, S. Nejad Ebrahimi¹, M.H. Mirjalili¹, M. Tabefam¹, M. Hamburger²

¹Department of Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, Tehran, Iran.

²Division of Pharmaceutical Biology, Department of Pharmaceutical Science, University of Basel, Basel, Switzerland.

Background and objectives: The genus *Colchicum* belongs to the family Colchicaceae, which comprises of 19 genera, and 225 species worldwide. They have been recognized for more than 2000 years for their noticeable biological properties. The *Colchicum* species are well known for presence of tropolonic alkaloids, mainly colchicine. Colchicine, is still the drug of choice for treatment of gout, and is used for the treatment of a number of proinflammatory disorders, such as familial Mediterranean fever, and Behcet's disease. Clinical studies have proved colchicine to possess potent anti-tumor activity. *Colchicum speciosum* Steven is an indigenous perennial herbaceous plant widely distributed in northern, central and western regions of Iran. **Methods:** In the present study, the phytochemical composition of MeOH extract from bulbs of *C. speciosum* collected from Savadkouh region, Iran was investigated by combination of HPLC-PDA-MS spectrometry and NMR spectroscopy. The fractionation of MeOH extract was carried out by partitioning on CH₂Cl₂, EtOAc and water. **Results:** The isolation and purification of CH₂Cl₂ portion by combination of reverse and normal phase chromatography resulted in the isolation, purification and identification of two new tropolonic alkaloids, compounds (1) and (2), as well as two known compound colchicine (3) and demecolcine (4). Their structures were established by extensive spectroscopic methods, including 1D (¹H NMR) and 2D-NMR (COSY, HSQC and HMBC). The absolute configurations of isolated compounds were established by aid of circular dichroism. **Conclusion:** Phytochemical investigation of CH₂Cl₂ extract of *C. speciosum* by combination of HPLC, column chromatography and hyphenated spectroscopic techniques led to identification two new alkaloids with potential as lead compounds.

Keyword: colchicine, *Colchicum speciosum* Steven, tropolonic alkaloid