

Joint Meeting on
International Conference on
PHARMACOLOGY AND TOXICOLOGY
&
18th International Conference on
MEDICINAL AND PHARMACEUTICAL CHEMISTRY
October 18-19, 2018 Dubai, UAE

Novel bufadienolide glycoside and a homoisoflavonoid from *Rhodocodon campanulatus* (Asparagaceae)

Alaa Alqahtani^{1,2} Moses K^{1,2}, Dulcie A Mulholland^{1,2} and Wolfgang Wetschnig³

¹University of Surrey, UK

²Umm-al-Qura University, Saudi Arabia

³University of Graz, Austria

Rhodocodon campanulatus is a member of the bulbous Urgineae tribe of the Scilloideae subfamily of the expanded Asparagaceae family (formerly Hyacinthaceae). Plants of the Urgineae tribe are used as traditional remedies for the treatment of several ailments, such as infections, rheumatism, inflammation and disorders associated with the central nervous system. The Urgineae tribe is distributed from South Africa to the Mediterranean, Saudi Arabia, India and Myanmar. The chemical constituents of plants of the *Rhodocodon* genus are not documented and hence the plant was investigated for chemo-taxonomical reasons. In this study we report the isolation of a novel bufadienolide glycoside and a known homo-isoflavonoid from the ethanol extract of the bulbs of *Rhodocodon campanulatus*. The major compounds were novel bufadienolide glycoside, 1, 3 β -(O- β -D-glucopyranoside)-14 β -hydroxybufo-20,22-dienolid-19-al, and the known homo isoflavonoid, 2, 5,7-dihydroxy-3-(3-hydroxy-4-methoxybenzyl) chroman-4-one, previously isolated from the South African *Scilla kraussi*. The structures of 1 and (2, 2a-b) (figure 1) were determined by the analysis of their NMR and MS spectra. The absolute configuration at C-3 for 2 was determined in this study as S on the basis of its electronic circular dichroism study. A positive Cotton effect at 290 was in agreement to those reported for homo isoflavonoid with H-3 in β position. Compound 1 was screened against NCI60 cancer cell lines and did not show any significant growth inhibition. Compound 2-2a-b was tested for anti-angiogenic inhibition ability. Compound 2b was found to be effective against the angiogenesis of human retinal micro vascular endothelial cells (HRECs) with GI₅₀ values of 128 μ M.

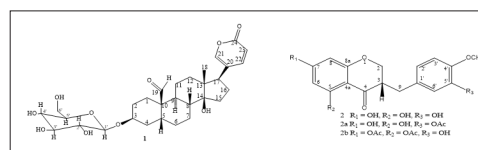


Figure 1: The structure of compounds isolated from *Rhodocodon campanulatus*.

Recent Publications

- Schwikkard Sianne, Alqahtani Alaa, Knirsch Walter, Wertschnig Wolfgang, Jaksevicius Andrius, Opara Elizabeth, Langat Moses K and Mulholland Dulcie (2017) Phytochemical investigations of three *Rhodocodon* (Hyacinthaceae *sensu* APG II) species. *J. Nat. Prod*; 80: 30-37.

References

- Goel A, Ram V J, (2009) *Tetrahedron*; 65: 7865-7913.
- Koorbanally N A, Koorbanally C, Harilal A, Mulholland D A, Crouch N R (2004) *Phytochem*; 65: 3069-3073.
- Crouch N R, Mulholland D A (1999) *Phytochem*; 51: 943-946.
- Adinolfi M, Barone G, Corsaro M M, Mangoni L (1988) *Tetrahedron*; 44, 15: 4981-4888.

Biography

Alaa Alqahtani is an Assistant Professor in Pharmaceutical Chemistry Department at Umm Al-Qura University. She has completed her Graduation from Umm Al-Qura University and Master's in Chemistry with Biological Chemistry from University of Hull, UK. She completed her PhD from Surrey University, UK in the field of Natural Products Chemistry (Pharmaceutical Chemistry). Her research focuses on the discovery of novel drugs from traditional medicinal plants, marines and their determination of their absolute stereo structures using electronic circular dichroism. Her areas of expertise includes, isolation, identification and quantification of compounds from natural sources, synthesis of bioactive molecules and examine the possible biological activities of these compounds.

amqahtani@uqu.edu.sa