Biochemical Systematics and Ecology 56 (2014) 125–128

Contents lists available at ScienceDirect

Biochemical Systematics and Ecology

journal homepage: www.elsevier.com/locate/biochemsyseco

Flavonoids from *Allium myrianthum* Boiss

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ARTICLE INFO

Article history:
Received 4 March 2014
Accepted 24 May 2014
Available online 14 June 2014

Keywords:
Allium myrianthum Boiss
Alliaceae
Allioideae
Amaryllidaceae
Flavonoid glycosides
Chemosystematics

The first phytochemical investigation of *Allium myrianthum* Boiss. led to the isolation of ten flavonoids. They were characterized as three flavonoid aglycones and seven flavonoid glycosides. Their structures were established on the basis of chemical and spectroscopic analysis. The chemosystematic relationships of *A. myrianthum* and its significance were also discussed.

1. Subject and source

Allium L. is the largest genus of the petaloid monocotyledons, comprising about 750 species and 72 sections mainly distributed in temperate climates of the Northern Hemisphere, except for a few species occurring in Chile (*Allium juncifolium*), Brazil (*Allium sellovianum*) or tropical Africa (*Allium spathaceum*) (Friesen et al., 2006; Hirschegger et al., 2010). *Allium myrianthum* is one of 21 wild species growing in Egypt, included in section Codonoprasum Rchb. (Boulos, 2005, 2009; El Garf, 2000). The plant material was collected from the North coast, Burg Al Arab in March 2008, leg. M.M. Marzouk and Mona El-Shabrawy (no.746) and identified according to Täckholm (1974) and Boulos (2005) by Dr. Ibrahim A. El Garf. A voucher specimen was deposited in the herbarium of the National Research Center (CAIRC).

2. Previous work

No phytochemical studies are reported so far from *A. myrianthum* Boiss.

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http://dx.doi.org/10.1016/j.bse.2014.05.015

3. Present study

The whole plant of *A. myrianthum* was dried in the shade and ground. The powder was extracted with 70% MeOH three times at room temperature and evaporated under reduced pressure. The residue was chromatographed on a polyamide 6S column (Riedel-De-Haen AG, Seelze Hanver, Germany) eluted with a gradient of water and methanol. The column fractions were chromatographed on paper chromatography (descending) Whatman No.1 and 3 MM paper, using solvent systems BAW (n-BuOH–AcOH–H_2O, 4:1:5, upper phase), 15% AcOH (H_2O: AcOH, 85:15) and H_2O. The isolated compounds were further purified on a Sephadex LH-20 column (Pharmazia, Uppsala, Sweden) with standard solvent systems (Mabry et al., 1970).

The present work deals with the isolation and characterization of ten flavonoids Fig. 1. They were identified as kaempferol 3-*O*-*β*-D-glucopyranoside (**1**), kaempferol 3-*O*-(6″-*α*-L- rhamnopyranosyl)-*β*-D-glucopyranoside-7-*O*-*α*-L-rhamnopyranoside (**2**), quercetin (**3**), quercetin 3-*O*-*β*-D-glucopyranoside (**4**), quercetin 3-*O*-(6″-*α*-L-rhamnopyranosyl)-*β*-D-glucopyranoside; rutin (**5**), quercetin 3-*O*-(6″-*α*-L-rhamnopyranosyl)-*β*-D-glucopyranoside-7-*O*-*α*-L- rhamnopyranoside (**6**), apigenin (**7**), apigenin 7-*O*-*α*-L-rhamnopyranoside (**8**), luteolin (**9**) and luteolin 7-*O*-*α*-L-rhamnopyranoside (**10**). Their structure

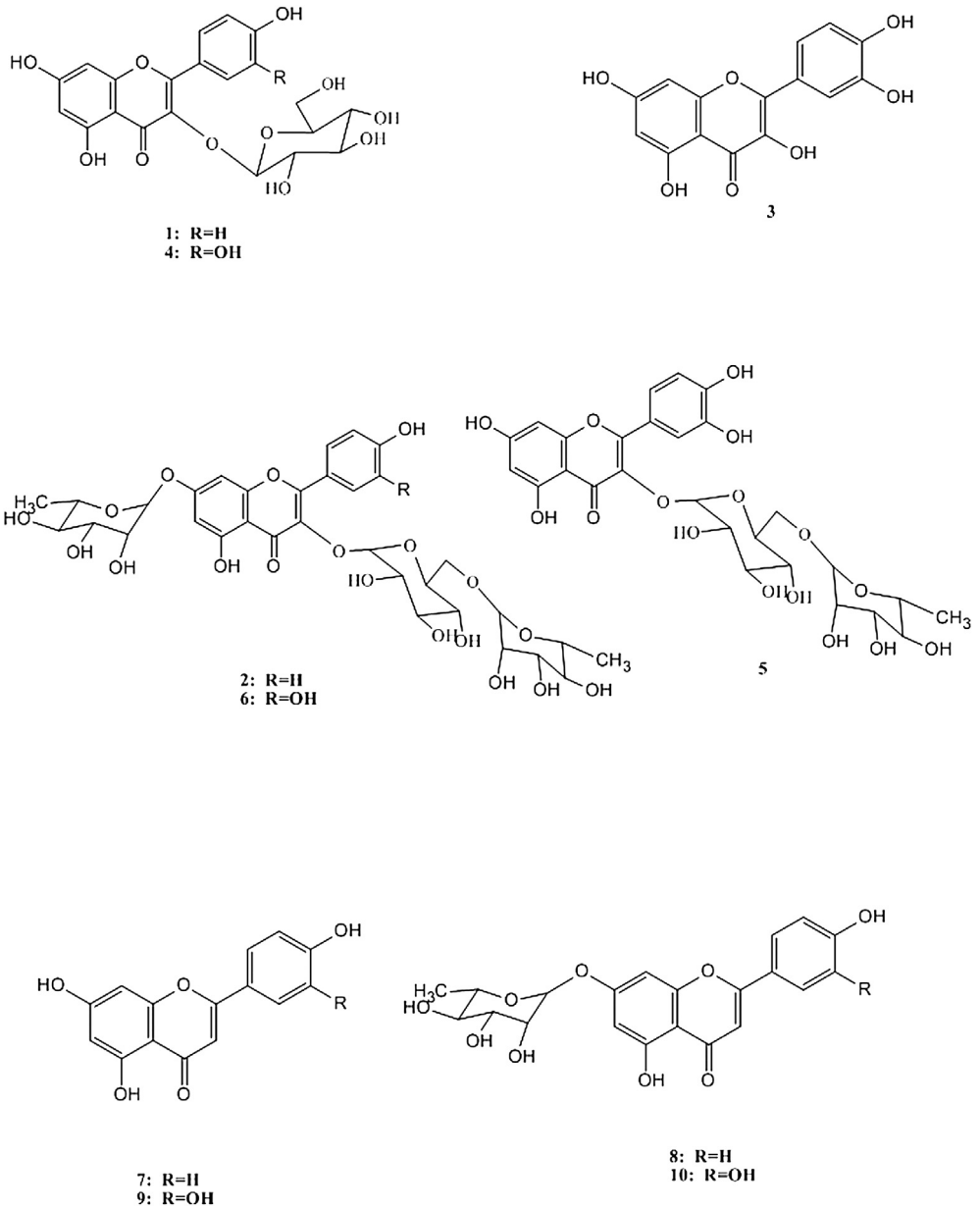

Fig. 1. Chemical structure of the isolated compounds from *Allium myrianthum* Boiss.