Quercetin 3-O-(6"-galloyl)-β-D-galactoside from
Polygonum viscosum (Polygonaceae)

Bidyut K. Datta\textsuperscript{a}, Sadhan K. Datta\textsuperscript{b}, Satyajit D. Sarker\textsuperscript{a,}\textsuperscript{*}

\textsuperscript{a}Department of Pharmacy, University of Dhaka, Dhaka 1000, Bangladesh
\textsuperscript{b}Department of Pharmaceutical Technology, Jadavpur University, Calcutta 700032, India

Received 3 September 1999; accepted 21 October 1999

Keywords: Polygonum viscosum; Polygonaceae; Flavonoid; Quercetin; Quercetin 3-O-(6"-galloyl)-β-D-galactoside; Chemotaxonomy

1. Subject and source

\textit{Polygonum viscosum} Buch.-Ham. Ex D. Don (Family: Polygonaceae), commonly known as “Bishkatali”, is an erect annual herb indigenous to Nepal and widely distributed in Bangladesh, north-east India, China and Japan. The plants were collected from Panchari, Chittagong and a voucher specimen (voucher no 764) developed in the Herbarium of the Department of Botany, University of Dhaka, Bangladesh.

2. Previous work

To our knowledge no report on the phytochemical or pharmacological studies on \textit{P. viscosum} is available to date.
3. Present study

Ground dried whole plant parts (2.3 Kg) of *P. viscosum* were extracted successively with *n*-hexane, EtOAc and MeOH. Reversed phase preparative HPLC (*C*<sub>18</sub> preparative column, eluted with a gradient 10–100% acetonitrile in water in 50 min, 55 ml/min, detection at 254 nm) of the Sep-Pak fraction (60% MeOH in water) obtained from a portion of the MeOH-extract (3.8 g) has yielded the common flavonoid, quercetin (1, 16.2 mg) (Wenkert, 1977; Wagner, 1976; Fraser, 1973; Batterham, 1964) and a relatively less common flavonol glycoside, quercetin 3-O-(6''-galloyl)-ß-D-galactoside (2, 3.5 mg) (Kadota et al., 1990). The structures of these isolates were determined unambiguously by spectroscopic techniques, notably, UV, <sup>1</sup>H NMR, COSY45, <sup>13</sup>C NMR, HMBC and HMQC, and also by direct comparison with the respective literature data.

4. Chemotaxonomic significance

The flavonoids and their glycosides have been used as chemotaxonomic markers in the genus *Polygonum* (Isobe and Noda, 1987; Park, 1987; Mun and Park, 1995) and it has been noted that flavonoids and flavonol glycosides are of wide-spread occurrence in the genus *Polygonum* (Isobe and Noda, 1987). Among them, glycosylation at C-3 of the quercetin nucleus has been found to be the most common trend, and present in all species of this genus (Park, 1987). While rhamnose, glucose, arabinose and rhamnosyl-rhamnose are the most common sugars found as glycones of the flavonol glycosides (Mun and Park, 1995), galactosylation is rather uncommon in the genus *Polygonum* or in the family Polygonaceae. The flavonoid galactoside gallate, quercetin 3-O-(6''-galloyl)-ß-D-galactoside has previously been reported from few other families: Saxifragaceae (Collins et al., 1975), Euphorbiaceae (Nahrstedt et al., 1974) and Lythraceae (Kadota et al., 1990). Thus, the presence of quercetin and quercetin 3-O-(6''-galloyl)-ß-D-galactoside in *P. viscosum* might have some chemotaxonomic implications.
Acknowledgements

We thank Professor Abul Hassan (Department of Botany, University of Dhaka, Bangladesh) for plant identification.

References

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