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Glycosides of Phenolic Acids from *Metaxya rostrata* (Kunth C. Presl)

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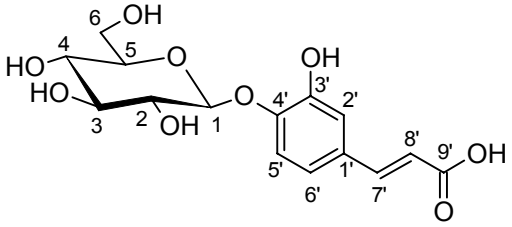
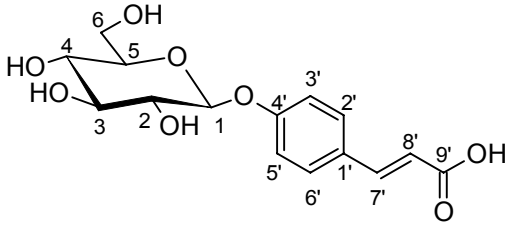
Metaxya rostrata, a tree fern belonging to the family of *Metaxyaceae,* is found in lowland rain forests of Central and South America. The chemical composition of *M. rostrata* has not been fully investigated. Until now only two polyphenols (cinnamtannin B-1 and aesculitannin), sugars and common sterols have been isolated [1]. *M. rostrata* is used in traditional medicine in Costa Rica against intestinal diseases such as ulcers or tumours. Suspensions of the dried rhizomes in water are applied orally. As tropical plants used in ethnic medicine are a rich source for new cytotoxic compounds [2], the chemical composition of the rhizome was further investigated.

Dried rhizomes were extracted by sonification with water and the water extract was partitioned sequentially with ethyl acetate and butanol and the residue of the water phase was extracted with methanol. The resulting fractions were subjected to vacuum liquid chromatography (VLC) on silica gel using EtOAc/MeOH/H_2O mixtures of increasing polarity as mobile phases to obtain 15 fractions. Fraction 12 showed reasonable cytotoxic activity [1] and was subjected to column chromatography on Sephadex LH-20 and elution with 80% MeOH. Of 13 resulting subfractions, fractions B and D were subjected to repeated column chromatography on silica gel. Two rare phenolic acid glycosides were isolated. By detailed NMR experiments the compounds were identified as 4-*O*-(ß-D-glucopyranosyl)caffeic acid (12 mg) and 4-*O*-(ß-D-glucopyranosyl)-*trans*-coumaric acid (1.2 mg).

These two substances have been described in very few plants so far.



4'-*O*-(ß-D-glucopyranosyl)caffeic acid



4'-*O*-(ß-D-glucopyranosyl)-*trans*-coumaric acid

[1] Virtbauer J, Krenn L, Kählig H, Hüfner A, Donath O, Marian B. Chemical and pharmacological investigations of Metaxya rostrata. Z Naturforsch C. 2008; 63: 469–475. PMid:18810987

[2] Kim J and Park E.J. Cytotoxic anticancer candidates from natural resources. Curr Med Chem Anticancer Agents. 2002; 2: 485–537. doi:10.2174/1568011023353949