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Ensifolins A-M, new phenanthrenes from Juncus ensifolius

Dóra Stefkó

Email: stefko.dori@gmail.com

Phenanthrenes form an increasing group of aromatic plant secondary metabolites. These compounds are derived mainly from stilbene precursors and can be divided into three major groups: mono-, di-, and triphenanthrenes. In many cases, phenanthrenes are substituted with special functional groups, therefore, they are characteristic to certain plant families; e.g. stilbene-substituted phenanthrenes were isolated only from Orchidaceae species, while vinyl-substituted phenanthrenes were found exclusively in Juncaceae species. These compounds can serve as chemotaxonomic markers. Phenanthrenes are representative metabolites of Juncaceae species [1].

In continuation of our work dealing with the isolation of phenanthrenes from Juncaceae species, *Juncus ensifolius* Wikstr. was investigated. 17 Phenanthrenes were isolated from the methanol extract of the plant by using different chromatographic methods (VLC, MPLC, Sephadex LH-20 gel chromatography and HPLC). The structure elucidation of the compounds was carried out by extensive NMR and HRMS experiments.

14 Compounds (ensifolins A-M), from which 8 monomers and 4 dimers are new natural products. Some compounds are unique as they are substituted with flavonoid or benzaldehyde. All compounds were isolated for the first time from the plant.

Supervisor: Andrea Vasas

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References

[1] Tóth B, et al. J. Nat. Prod. 2018; 81: 661-678.