

New Lignans from *Cedrela odorata* L. Stem Bark

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Introduction

Cedrela odorata L., a plant member of the Meliaceae family, is a timber tree native to tropical regions of America, also introduced as a cultivated species in Africa and many tropical countries of Asia and Oceania. The infusion of *C. odorata* stem bark is used in South American folk medicine for the treatment of fever, hemorrhage, inflammation, and digestive diseases, including diarrhea, vomiting, and indigestion. The decoction of the bark is also used in Africa as a remedy for malaria and fever¹. Meliaceae plants, particularly species of *Cedrela* genus, are distinguished by the occurrence of limonoids, alkaloids, and polyphenols such as lignans and proantocyanidins^{2,3}. Limonoids has been suggested to be the main responsible of *C. odorata* pest resistance, however, other biological studies have shown that polyphenols contained in several parts of the plant can have detrimental effects on insects⁴. This consideration prompted us to investigate *C. odorata* stem bark polar extracts.

Method

The dried and powdered *C. odorata* stem bark (300 g), collected in Merida, Venezuela, was sequentially extracted with *n*-hexane, CHCl₃, CHCl₃-MeOH (9:1), and MeOH. The CHCl₃-MeOH extract was subjected to silica gel chromatography, using CHCl₃ and increasing concentrations of MeOH in CHCl₃ (0-100%) as eluents, while the MeOH extract was separated on Sephadex LH-20 column eluting with MeOH as eluent. Subsequently, the fractions obtained from both silica gel and Sephadex LH-20 column chromatographies were submitted to RP-HPLC.

Results / Discussion / Conclusion

The phytochemical study of *C. odorata* stem bark polar extracts led to the isolation of eight compounds including two new lignans (**1–2**) (**Fig. 1**), which structures are shown in **Fig.1**, and six known substances that were characterized as 4,5-dihydroblumenol A (**3**), 7-megastigmene-3 α ,6,9-triol (**4**), catechin (**5**), scopoletin (**6**), homovanillic alcohol (**7**), and 2-(3,4-dimethoxyphenyl)ethyl-*O*- β -D-glucopyranoside (**8**). The structural determination of the isolated secondary metabolites was performed by 1D- and 2D-NMR spectroscopic techniques, and by mass spectrometry analyses. All compounds obtained from this species are in accordance with the ones found in other Meliaceae plants.

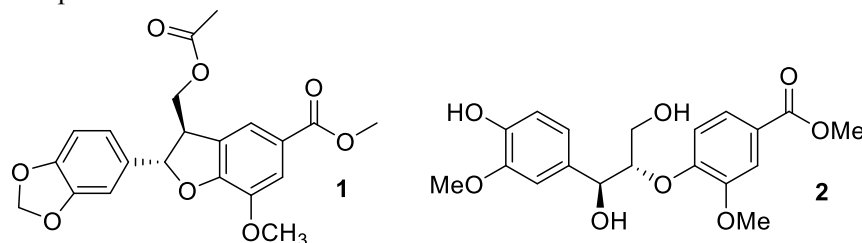


Fig. 1 Structures of compounds **1–2**

Bibliographic References

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