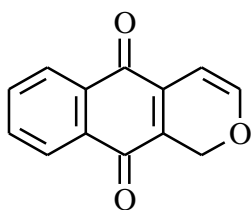


Isolation and Synthesis of Isagarin, a New Type of Tetracyclic Naphthoquinone, from the Roots of *Pentas longiflora*

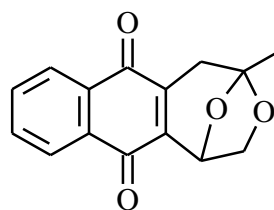
Luc Van Puyvelde, Bart Kesteleyn, Norbert De Kimpe, Samir El Hady and Tuyen Nguyen Van

Department of Organic Chemistry, Faculty of Agricultural and Applied Biological Sciences, University of Gent, Coupure Links 653, B-9000 Gent, Belgium

Pentas longiflora Oliv. (Rubiaceae) is an erect stemmed woody herb up to 3 m high from oriental inter-tropical Africa, which is reputed to possess several medicinal properties. In Rwanda, where it is known in the traditional medicine under the name of Isagara, the powder of the roots, mixed with butter, is used as an ointment to treat the skin mycosis *pityriasis versicolor*. In a bioassay-guided phytochemical investigation of the roots, the antifungal principle, i.e. pentalongin (**1**), was isolated. An antimycotic ointment was developed with the ethanol extract of the roots of *Pentas longiflora*.



1 (pentalongin)



2 (isagarin)

The interesting biological activity lead to a detailed phytochemical study of this plant in order to identify the minor components. The hexane extract of the dried roots of *Pentas longiflora* was fractionated by MPLC on Si gel and further purified by centrifugal partition chromatography (CPC) to afford isagarin (**2**) which was identified on the basis of its spectral properties.

Pentalongin **1** and Isagarin **2** were synthesized in a straightforward manner, proving the identity of these new natural naphthoquinones.