

5º Encontro Nacional de Química Orgânica

1º Simpósio Luso-Japonês

Auditório da Reitoria da Universidade de Aveiro
1 a 4 de Julho de 2003



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Epoxidation studies of 2-styrylchromones

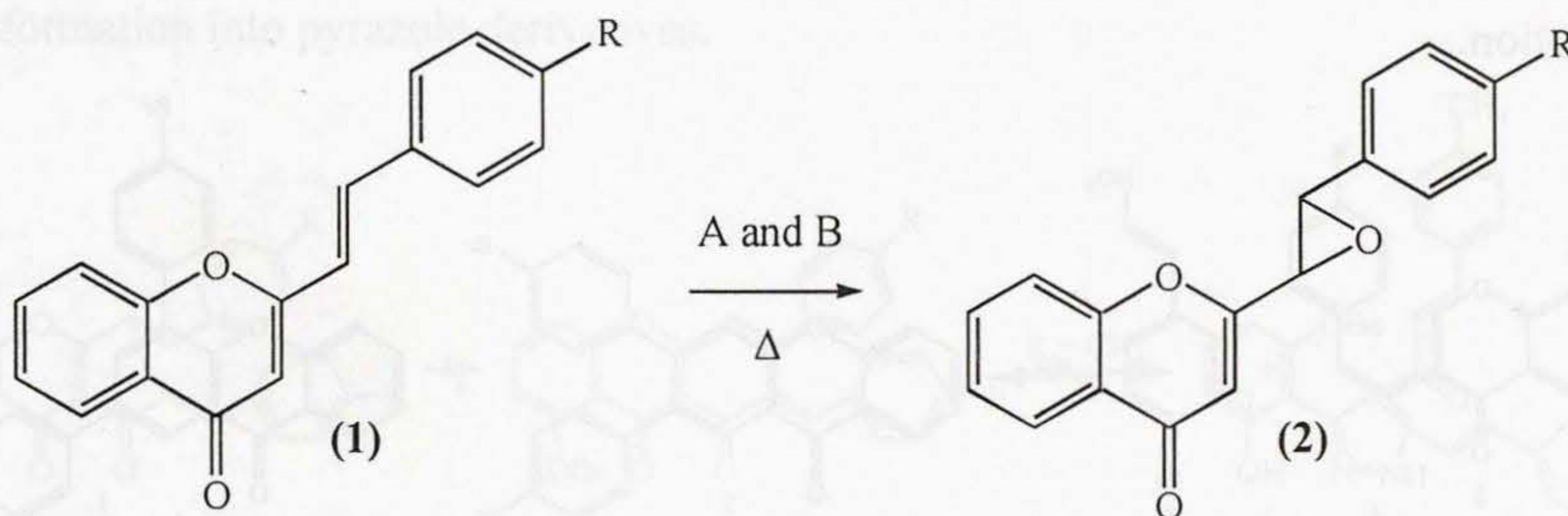
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Chromones constitute an important class of heterocyclic compounds because of their broad range of industrial applications. Certain natural and synthetic hydroxyl derivatives have shown important pharmacological, biocidal and mainly antioxidant activities.¹

We are interested in the design of new 2-styrylchromones analogues containing hydroxyl groups at C-3 and in the C α =C β systems because they could increase the antioxidant activity of these type of compounds.² Our first approach is the preparation of epoxides and then we will try to open the epoxide ring to give the desired hydroxyl derivatives. We studied the epoxidation of 2-styrylchromones **1** with hydrogen peroxide and iodosylbenzene using *N,N'*-bis(3,5-di-*tert*-butylsalicylidine)-1,2-cyclohexanediaminomanganese(III) chloride [salen Mn(III)] as catalyst. Different experimental conditions have been used in order to prepare epoxides **2** in moderate yields. In this communication, we report the synthetic details and structural characterisation of the obtained epoxides.



R = H, Cl and CH₃

A- salen Mn(III), 1-MeIm, H₂O₂ 30%, CH₂Cl₂/CH₃OH

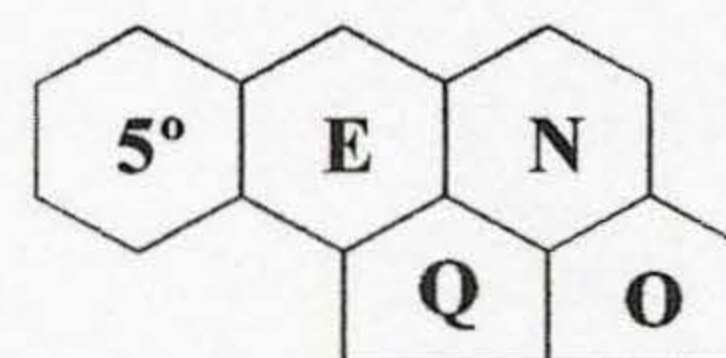
B- salen Mn(III), PyNO, PhIO, CH₃CN

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1. e.g. (a) Handbook of Antioxidants, Ed. E. Cadenas and L. Packer, Marcel Dekker, New York, **1996**; (b) Flavonoids in Health and Disease, Eds. C. A. Rice-Evans and L. Packer, Marcel Dekker, New York, **1998**.
2. e.g. (a) E. Fernandes, F. Carvalho, A. M. S. Silva, C. M. M. Santos, D. C. G. A. Pinto, J. A. S. Cavaleiro e M. L. Bastos, *Toxicol. Lett.*, **2001**, Vol 123, Istanbul, Turkey; (b) E. Fernandes, F. Carvalho, A. M. S. Silva, C. M. M. Santos, D. C. G. A. Pinto, J. A. S. Cavaleiro e M. L. Bastos, *J. Enz. Inhib.*; **2002**; Vol. 17 (1); pp. 45-48.



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CERTIFICADO

Clementina Maria Moreira dos Santos participou no 5º Encontro Nacional de Química Orgânica e 1º Simpósio Luso-Japonês, realizados na Universidade de Aveiro, de 1 a 4 de Julho, tendo apresentado a comunicação intitulada **Epoxidation studies of 2-styrylchromones**.

O Presidente da Comissão Científica

Artur Silva

(Prof. Doutor Artur Silva)

