QUÍMICA SUSTENTÁVEL

UM TEMA ... UMA REFLEXÃO

XX ENCONTRO NACIONAL

SOCIEDADE PORTUGUESA DE QUÍMICA

14 A 16 DEZEMBRO 2006 CAMPUS DE CAPARICA - FCT|UNL

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QUÍMICA SUSTENTÁVEL

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Synthesis of 2,3-arylxanthones using palladium catalysts

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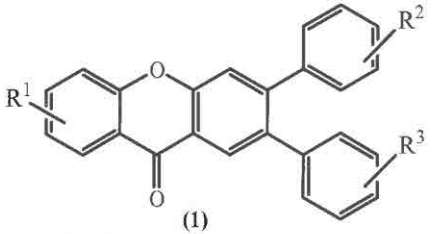
Xanthones constitute an important class of heterocyclic compounds with a broad range of biological properties (1). Antimicrobial, antitumour, anti-inflammatory as well as antioxidant activities are some examples of the applications presented for several derivatives of this type of compounds (2).



(1)

R^1, R^2, R^3 = H, OMe

Xanthones bearing aryl substituents are scarce and no natural derivatives have been reported with the 2,3-diaryl substitution pattern. In this communication we will describe the synthesis of 2,3-arylxanthones (1), by two different routes, involving the use of palladium catalysts. The first method involves the Heck reaction of 3-bromo-2-styrylchromones as aryl halides and styrenes as alkenes (3). In the second one there is a Heck reaction of 3-bromo-2-methylchromone with styrenes followed by an Aldol condensation of the obtained compounds with benzaldehydes to give 2,3-distyrylchromones, which gives the desired 2,3-diarylxanthones (1) after electrocyclisation and oxidation processes. In the present communication we will present and discussed the synthesis of xanthones (1) and the corresponding structural elucidation by extensive 1D and 2D NMR studies.

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(1) K. Hostettman, M. Hostettman, *in Methods in Plant Biochemistry*, Vol. 1 – Plant Phenolics, Ed. P. M. Dey, J. B. Harbone, Academic Press, 1989, pp. 493.

(2) (*e.g.*) G. J. Bennett, H.-H. Lee, *Phytochemistry*, 1989, 28, 967-998; H. Minami, M. Kinoshita, Y. Fukuyama, M. Komoda, T. Yoshizawa, M. Sugiura, K. Nakagawa, H. Tago, *Phytochemistry*, 1994, 36, 501-506; A. Abdel-Lateff, C. Klemke, G. M. König, A. D. Wright, *J. Nat. Prod.*, 2003, 66, 706-708; Y.-M. Chiang, Y.-H. Kuo, S. Oota, Y. Fukuyama, *J. Nat. Prod.*, 2003, 66, 1070-1073.

(3) C.M. M. Santos, A. M. S. Silva, J. A. S. Cavaleiro, *Synlett*, 2005, 3095-3098.