Design, synthesis and anticancer activity of nitric oxide donating/chalcone hybrids

Research Area: Faculty of Pharmacy
Type of Publication: Article

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Journal: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY
Volume: 54
Pages: 907-913
Month: August
ISSN: 0223-5234

A group of nitric oxide (NO) donating chalcone derivatives was prepared by binding amino chalcones with different NO-donating moieties including; nitrate esters, oximes and furoxans. Screening of the anticancer activity of the target compounds revealed that the selected NO-donating compounds exhibited from mild to strong cytotoxic activity. The NO/chalcone hybrids 3a and 3b exhibited remarkable activity against different types of cancer cell lines especially against the colon and melanoma cancer cell lines. The nitrate ester 3a exhibited moderate selectivity toward colon cancer subpanel with selectivity ratio of 5.87 at TGI level. (C) 2012 Elsevier Masson SAS. All rights reserved.