Synthesis, anti-inflammatory activity and ulcerogenic liability of novel nitric oxide donating/chalcone hybrids

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Abstract:
A group of novel nitric oxide (NO) donating chalcone derivatives was prepared by binding various amino chalcones with different NO donating moieties including; nitrate ester, oximes and furoxans. Most of the prepared compounds showed significant anti-inflammatory activity using carrageenan-induced rat paw edema method compared with indomethacin. The prepared compounds exhibited more protection than indomethacin in regard to gastric toxicity. Histopathological investigation confirmed the beneficial effects of the NO releasing compounds in reducing ulcer formation. The incorporation of the NO-donating group into the parent chalcone derivatives caused a moderate increase in the anti-inflammatory activity with a marked decrease in gastric ulcerations compared to their parent chalcone derivatives. (C) 2011 Elsevier Ltd. All rights reserved.