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Synthesis of new celecoxib derivatives: A search for novel cyclooxygenase-2 inhibitors as anti-inflammatory agents

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A new group of COX-2 inhibitors containing (SO_2CH_3 3a-p or/ and SO_2NH_2 3i-p), the most important COX-2 pharmacophore were synthesized. Refluxing propen-1-one derivatives with different phenyl hydrazine hydrochloride derivatives in ethanol afforded triaryl pyrazoline derivatives 3a-p. Their structures were confirmed by elemental analysis, IR, ^{1}H NMR, ^{13}C NMR and mass spectral data. All prepared compounds were evaluated for their *in vitro* COX-1/COX-2 inhibitory activity and the *in vivo* anti-inflammatory activity. All compounds were more selective for COX-2 isozyme than COX-1 isozyme and showed good *in vivo* anti-inflammatory activity. Compounds 3g, 3j and 3o showed the highest anti-inflammatory activity and were less ulcerogenic (Ulcer Index=6.85, 7.7, 5.92 respectively) than indomethacin (Ulcer Index=12.3) and comparable to celecoxib (Ulcer Index=4.85).

Biography

Madlen B Labib has done her BSc in Pharmacy and Pharmaceutical Sciences from Cairo University, Egypt. She completed her MSc in 2006 from Cairo University (Organic Chemistry) and finished her PhD from Beni Suef University (Pharmaceutical Organic Chemistry). She has done her Post-doctoral studies from Beni Suef University, Faculty of Pharmacy. Currently, she is a Lecturer for Pharmaceutical Organic Chemistry, Faculty of Pharmacy, Beni Suef University, Egypt.

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