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(54) Title of the invention : SYNTHESIS AND ANTIOXIDANT ACTIVITY OF 1-(1H-INDOL-1-YL)-2-(4-(((4-NITROPHENYL)IMINO)METHYL) PHENOXY)ETHANONE

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(57) Abstract :

The present invention relates to the synthesis and biological evaluation of a novel indole derivative, 1-(1H-indol-1-yl)-2-(4-(((4-nitrophenyl)imino)methyl)phenoxy)ethanone, exhibiting potent anti-inflammatory and antioxidant properties. The compound is synthesized via a reaction between 4-(2-(1H-indol-1-yl)-2-oxoethoxy)benzaldehyde and 4-nitroaniline in ethanol with glacial acetic acid as a catalyst, followed by recrystallization. Characterization was conducted using IR, ¹H NMR, and mass spectroscopy, confirming the structure and purity. The compound showed significant COX-2 inhibition and a marked reduction in paw edema in a carrageenan-induced inflammation model, demonstrating anti-inflammatory potential comparable to indomethacin. Additionally, its antioxidant activity was confirmed by a DPPH assay, with an IC₅₀ value of 18.6 µg/mL, close to that of ascorbic acid. The invention provides a promising lead for developing therapeutic agents for inflammation and oxidative stress-related diseases with a simple and efficient synthesis method.

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