

Anti-Inflammatory activity Of newly synthesized 7-chloro-2-methyl-4H-benzo [d] [1,3]-oxazin-4-one and 3-amino-7-chloro-2-methyl-quinazolin-4(3H)-one

Osarumwense Peter Osarodion

Ondo State University of Sciences and Technology, Okitipupa, Ondo State, Nigeria.



Abstract

Heterocyclic chemistry comprises at least half of all organic chemistry research worldwide in particular, heterocyclic structures form the basis of many pharmaceutical, agrochemical and veterinary products.

Methods: The condensation of Methyl-2-amino-4-Chlorobenzoate with acetic anhydride yielded the cyclic compound 2-methyl 7-Chloro-1, 3-benzo-oxazine-4-one (**1**) which further produce 3-Amino-2-Methyl 7-Chloro quinazolin-4(3H)-ones (**2**) via the reaction with hydrazine hydrate. The compounds synthesized were unequivocally confirmed by means of Infrared, Nuclear Magnetic Resonance (^1H and ^{13}C), Gas Chromatography-Mass spectrophotometry and Elemental analysis.

Results: Compound **1** and **2** has Anti-inflammatory activity of 96.78%, 95.71% and 97.62%, 95.35% at 10mg/kg and 20mg/Kg dose levels.

Discussion: Compound **1** has IR spectrum showed signals for carbonyl functional group at 1662 cm^{-1} , C-O and C-H stretch vibrations at 1102 cm^{-1} and 2871 cm^{-1} respectively. The ^1H NMR spectrum showed three aromatic protons at δ_{H} 7.59, 7.16 and 6.40 and a vinyl methyl protons at δ_{H} 2.57. In the ^{13}C NMR spectrum, the ester carbonyl resonated at δ_{C} 168.08, while the aromatic carbons resonated in the range δ_{C} 113.40 – 149.23. The resonances at δ_{C} 153.13 and δ_{C} 22.15 were due to the imine oxygenated carbon (C-1) and the methyl carbon respectively. Compound **2**, had NMR data similar to **1**, except for an additional signal at δ_{H} 5.80 in the ^1H NMR spectrum which was attributed to the amino protons (2H).

Conclusion: Compound **2** had a higher anti-inflammatory activity than Compound **1**. The compounds synthesized had a higher anti-inflammatory activity than Indomethacin, a standard anti-inflammatory drug.



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