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Abstract

Chemical modifications of Aryl Oxy Acetic acids

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Abstract:

Helminthiasis is a macro, parasitic disease of humans and animals in which a part of the body is infected with helminth parasites. It is one of the most deadly, neglected, tropical diseases and many die annually from this disease. The total eradication of this problem is very difficult. The drugs which expel helminth parasites from the body either by stunning or killing them without causing significant damage to the host are called Anthelmintics. The most commonly used class of anti helminthics are Benzimidazoles, whose mode of action is by blocking transportation of secretory granules and movement of other cell organelles by binding to beta-tubulin and inhibit polymerization of microtubules in the cytoskeleton of the helminthic parasite. Most of the anti helminthics are non-selective, with a narrow spectrum of activity, high toxicity, unsafe for undernourished children and pregnant women, requires follow up purgation and development of resistance by the parasite. So there is an urgent need for search and development of new Anthelmintics preferably with a novel mode of action and minimum side effects. Because of this, a scheme was designed which involved synthesis, characterization and biological evaluation of some 2-(Aryl Oxy Methyl)-1H-Benzimidazoles from different Aryl oxy acetic acids. The identification and characterization of the synthesized compounds were carried out by a melting point, thin layer chromatography, FT-IR, H1NMR, Mass data to ascertain that the synthesized compounds are of different chemical nature than the respective parent compound. The synthesized compounds were preliminarily screened for in-vitro anti-helminthic activity using Piperazine Citrate as standard.

Keywords: Aryl oxy acetic acid, Benzimidazole, FT-IR, H1NMR, Mass, Anti-helminthic activity

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