

Review Article

STUDY ON MANNICH BASES OF BENZIMIDAZOLES: A REVIEW

Umesh P. * Yasmin P., Bhadauria R.S., A. Kishor, Jadon G.
Shrinathji institute of Pharmacy Nathdwara, Rajasthan, India 313301

Nowadays, nitrogenous heterocyclic molecules have attracted a great deal of interest among medicinal chemists. Among these potential heterocyclic drugs, benzimidazole scaffolds are considerably prevalent. Due to their isostructural pharmacophore of naturally occurring active biomolecules, benzimidazole derivatives have significant importance as chemotherapeutic agents in diverse clinical conditions. Researchers have synthesized plenty of benzimidazole derivatives in the last decades, amidst a large share of these compounds exerted excellent bioactivity against many ailments with outstanding bioavailability, safety, and stability profiles. In this comprehensive review, we have summarized the bioactivity of the benzimidazole derivatives reported in recent literature with their available structure-activity relationship. Compounds bearing benzimidazole nucleus possess broad-spectrum pharmacological properties ranging from common antibacterial effects to the world's most virulent diseases. Several promising therapeutic candidates are undergoing human trials, and some of these are going to be approved for clinical use. However, notable challenges, such as drug resistance, costly and tedious synthetic methods, little structural information of receptors, lack of advanced software, and so on, are still viable to be overcome for further research.

Key words :- nitrogenous heterocyclic molecules, benzimidazole, active biomolecules, bioavailability, pharmacological properties, antibacterial effects.

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