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## A Comprehensive Study on Synthesis of Benzimidazole using Novel Techniques

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**Abstract:** Benzimidazoles are a class of heterocyclic compounds in which a benzene ring is fused to the 4 and 5 positions of an imidazole ring. Benzimidazole refers to the parent compound, while benzimidazoles are a class of heterocyclic compounds having similar ring structures, but different substituents. Green chemistry is the new and rapidly emerging field of chemistry. It involves the utilization of a set of principles that reduces or eliminates the use or generation of Hazardous substances in the design, manufacture and application of chemical products. Conventional methods of synthetic reactions need longer heating time, elaborate and tedious apparatus set up which result in higher cost and environmental pollution in Contrast to greener methods which are eco-friendly and economical. In Recent years, a large number of reports related to synthesis of Nitrogen, Oxygen and Sulphur containing heterocyclic have appeared owing to a wide variety of their biological Activity. In recent years, numerous reports concerning the synthesis of heterocyclic compounds under various conditions like solvent-free, reactants immobilized on solid Support, microwave irradiation condition, green catalyst and green solvent have appeared. Benzimidazole is a heterocyclic aromatic organic compound, it is an important Pharmacophore and privileged structure in medicinal chemistry. It plays a very important role with plenty of rational therapeutic activities such as antiulcer, antihypertensive, analgesic, Anti-inflammatory, anti-viral, antifungal, anticancer, and antihistaminic. Because of its Importance, the methods for their synthesis have become a focus of Synthetic Organic Chemists. Therefore, in the present work I tried to organize the chemistry of different Derivative of substituted benzimidazole and some of the important methodologies used for the Synthesis.

Keywords: Benzimidazole, Eco-Friendly, Solvent free, green synthesis, Microwave Assisted, Catalysis.

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