

Review Paper Synthesis of Imidazole Derivatives: Methods and Biological Activities

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Abstract: *Imidazole and its derivatives constitute a significant class of heterocyclic compounds with diverse biological activities, making them attractive targets in medicinal chemistry. This research paper provides an in-depth analysis of the synthesis methods employed for the preparation of imidazole and its derivatives, along with an exploration of their biological activities. Various synthetic routes, including traditional and modern methodologies, are discussed in detail, highlighting their advantages and limitations. Furthermore, the biological activities exhibited by imidazole derivatives, such as antimicrobial, anticancer, and anti-inflammatory properties, are thoroughly examined, providing insights into their potential applications in drug discovery and development.*

Keywords: Imidazole, heterocyclic compounds, biological activities, antimicrobial, anticancer, anti-inflammatory, drug discovery