

Synthesis and Biological Evaluation of Some Pyrazole Derivatives

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Abstract: *Heterocyclic compounds and their equivalents that include nitrogen have historically been valuable sources of pharmaceuticals. In a five-membered ring structure, the aromatic compound pyrazole, which contains two nitrogen atoms, offers a variety of uses and stereochemical complexity. Numerous pyrazole compounds have demonstrated a range of pharmacologic and physiological advantages over the past decade of research. This arises from apprehensions that the complete efficacy of a substance might be constrained by its pharmacological characteristics and their correlation with its structural and functional attributes. Diverse variants of the pyrazole nucleus provide extensive applications in technology, medicine, and agriculture. They are explicitly classified as antioxidants, protein glycation inhibitors, anti-viral agents, anti-bacterial agents, anti-fungal agents, anti-cancer agents, anti-depressants, anti-inflammatory agents, and anti-tuberculosis agents. This review examines the most notable results by scientists and chemists concerning the pyrazole compound, including its general properties, various synthesis methods, prominent derivatives, reactions, and biological applications, particularly in antibacterial, antimicrobial, antifungal, antimalarial, and anticancer activities.*

Keywords: Pyrazole, Heterocyclic Compound, Biological properties, Physical properties

