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N_2O_2 Schiff Base and Their Metal Complexes as Anticancer Agents: A Review of Their Synthesis, Characterization and Anticancer Activity

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Abstract: *This review provides a thorough analysis of the potential use of N_2O_2 Schiff bases and metal complexes as anticancer agents, focusing on their promising anticancer activities. N_2O_2 Schiff bases are mainly recognized by their ability to coordinate with metal ions. Here an attempt was made to elaborate the synthesis and characterization of these N_2O_2 Schiff base metal complexes and how the structural features of these complex influence the biological activity. Few mechanisms of action include the induction of apoptosis via the generation of ROS and DNA binding. The structure-activity relationship was explained with respect to substitution and the size of the ring and coordination geometry, which directly influence the modulating anticancer effects of these compounds. In addition, the potential applications of N_2O_2 Schiff base metal complex in combination therapies connection with conventional treatments of cancer, were probed. Last but not least, toxicity, stability, delivery system optimization and present challenges were addressed with future directions in research that may bring their full realization of therapeutic potential of this class of N_2O_2 Schiff base metal complexes*

Keywords: ROS, DNA, Anti- Cancer, Anti-Tumour, N_2O_2 Schiff Bases, combination therapies, conventional treatments

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