ABSTRACT

The pharmaceutical use of metal complexes has excellent potential and broad arrays of medicinal applications of metal complexes have been investigated. The success of cisplatin has aroused great interest in the development of new metal complexes to diagnose and treat disease including diabetes, Alzheimer’s and cancer. Therefore, synthetic chemists design new, less toxic, more effective and more efficient DNA-targeted drugs based on metal complexes for the treatment of various diseases.

Platinum complexes are widely used anticancer drugs. New generations of metal chemotherapeutics offer the prospect of combating platinum resistance and expanding the range of treatable cancers. After the clinical success of cisplatin, the development of novel transition-metal-based compounds has received great attention. Copper (Cu) is found in all living organism and is a crucial trace element in redox chemistry, growth and development. Copper is used in a multitude of cellular activities including respiration, angiogenesis and immune response. Recently, copper has become a focus in medical research ranging from Alzheimer’s disease to cancer. Copper modulation has been suggested to be a potential modality for therapy in this disease. Copper complexes, especially mononuclear copper complexes, are widely used as antifungal and antibacterial drugs, DNA structural probes, potential anticancer drugs etc.

The present research work was focused on synthesis and characterization of some novel Schiff base ligands of 2-aminobenzothiazole derivatives (derived from 2-aminobenzothiazole with Knoevengal condensate of β-ketoanilide (obtained from β-ketoanilide with substituted benzaldehydes)) and their copper(II) complexes. Furthermore, they were subjected to antimicrobial activity against pathogenic bacteria. Pharmacological and inhibitory activities are also performed. It is hope that pharmacological information will lead to the development of these proposed ligand systems and may be behave as novel therapeutic agent.
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BOOMADEVI JANAKI. G