Synthesis and Characterization of 2,2’-(Polyhydroxy)-bis-(benzimidazole) Ligands and their Complexation with Transition Metals

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Many benzimidazoles and bis-benzimidazoles do show a wide range of pharmacological activities. Their biological importance, including their inhibitory properties of the replication of poliovirus have been fully demonstrated. In addition to their biological importance, they are a very good coordination agents. Their complexation with various transition metals have been studied. Their biological activity has been thought to improve selectively on certain biological systems, due to their ability to chelate with transition metals. But, many of these ligands and their complexes with transition metals have not been fully characterized by means of modern spectroscopic methods. Most of the work done on this class of the compounds is connected with their medicinal properties.

The aim of this research is to prepare and fully characterize various polyhydroxy-bis-benzimidazole ligands (figure 1) and their transition metal complexes. The characterization of the ligands and their complexes were carried out using analytical data and modern spectroscopic methods such as IR, UV-vis, $^1$H, and $^{13}$C NMR spectrometers.