Structural Characterisation of Novel Mn(II) Complexes of Tripodal Schiff Base ligands and N-alkylated Benzimidazol Ligand, Their Electrochemical Properties and Catalytic Activity

Aysegul Iskenderb, Muhammet Kosea, Vickie McKeeab

a) Chemistry Department, Loughborough University, Loughborough LE11 3TU, UK
b) Kahramanmaras Sutcuimam Universitry, Kahramaras, 46100, Turkey
ayseguliskender@hotmail.com

Benzimidazol derivatives and their metal complexes are of great interests mainly due to their biological activity and clinical applications [1-2]. Crystal structure and metal complexes of 2,2'-pyridine-2,6-diylbis(1H-benzimidazole)(L) and its N-Alkylated derivatives with manganese (II) ion have been studied in detail [1,3]. In this study, N-butyl alkylated benzimidazol derivative of 2,2'-pyridine-2,6-diylbis(1H-benzimidazole) (L1) and its penta and hexa coordinated Mn(II) complexes with various negatively charged ligands such as Cl-1, NCS-1 and ClO4-1 were prepared.

Seven-coordinate complexes of manganese (II) have been found to posses SOD and catalase activities, and potential uses as metallodrugs for the treatment of oxidative stress [4-5]. In this content, symmetric (L2) and asymmetric (L3 and L4) tripodal Schiff base ligands derived from various tetraamine and pyridinecarboxyaldehyde can be used to give access to mononuclear seven-coordinate Mn(II) complexes from a single ligand. The synthesised complexes are structurally characterized by X-ray crystallography and their electrochemical properties have been studied. Additionally, catalase activity of structurally characterised complexes is tested by measurement of oxygen evolved.

REFERENCES