

**SYNTHESIS, CHARACTERIZATION AND BIOLOGICAL ACTIVITIES OF
COPPER(II) COMPLEX OF 2,9-DIMETHYL-1,10-PHENANTHROLINE**

VISHNU P. SONDHIA, R.N. PATEL, DINESH K. PATEL, K.K. SHUKLA & Y. SINGH

Department of Chemistry, A.P.S. University, Rewa , M.P. , India.

ABSTRACT

One new copper(II) complex of 2,9-dimethyl-1,10-phenanthroline *viz.*, [Cu(dmp)Cl₂(H₂O)] has been synthesized and structurally characterized by using single crystal x-ray diffraction studies. The complex crystallizes in monoclinic crystal system having space group *P*2₁. The copper(II) environment is distorted square pyramidal. Two molecules are present in the unit cell. Complex has been also characterized by elemental analysis, infrared, UV-visible, electron paramagnetic resonance and electrochemical studies. DNA binding activity of the complex has been measured by absorption spectroscopy. DNA cleavage activity of complex was measure using pBR322 DNA in the presence and absence of H₂O₂. The antibacterial activity of complex has been measured using agar disc diffusion method against *E. coli*, *Citrobacter* and *Vibrio* respectively.

KEYWORDS: Crystal Structure, Epr, Antibacterial Activity, DNA Cleavage, DNA Binding Activity