

Figure 2: UV spectra for  $L_1$

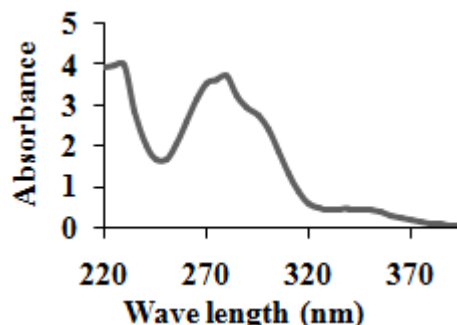


Figure 2 (b): UV spectra for  $Co(II)(L_1)_2$  complex

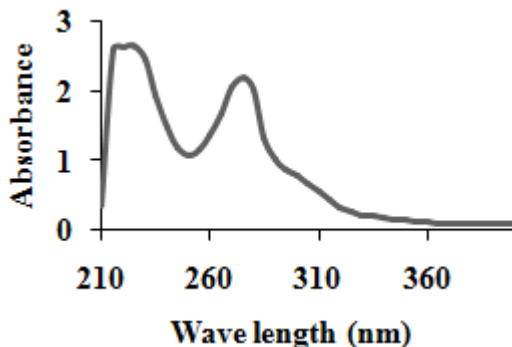


Figure 2 (a): UV spectra for  $Cu(II)(L_1)_2$  complex

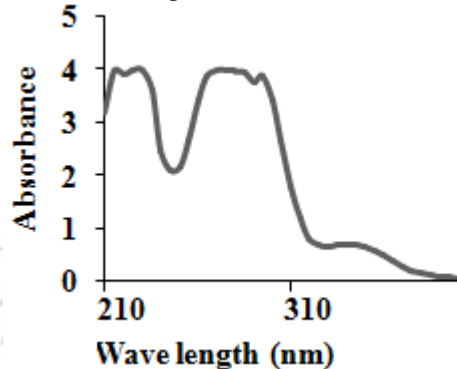


Figure 2 (c): UV spectra for  $Mn(II)(L_1)_2$  complex

### 3.4. $^1H$ -NMR spectra for $L_1$

The  $^1H$ -NMR shows conformation of Ligand structure. The chemical shift value of proton in predicted in the Figure-3. The NMR value OH (s, 5.35), OH (s, 11.0), imine -CH (s, 8.64).

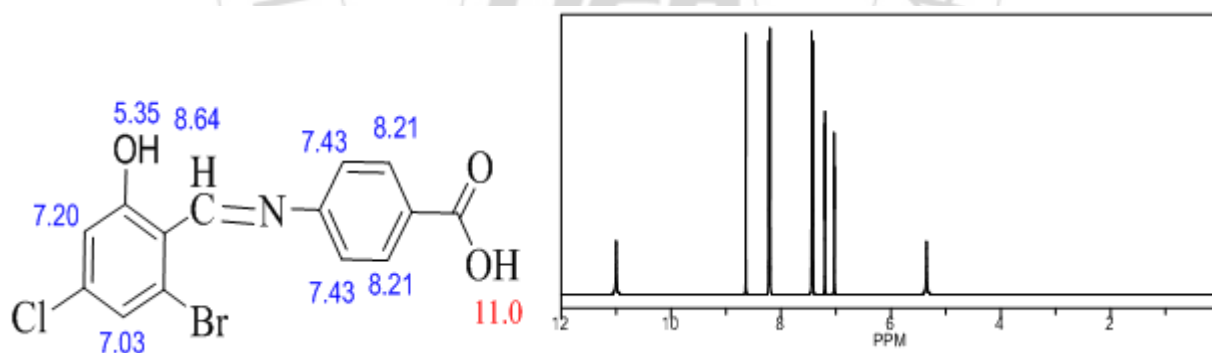


Figure 3:  $^1H$ -NMR spectrum and the predict structure for  $L_1$

### 3.5. EPR Spectrum (Electron paramagnetic resonance)

The EPR spectrum of Cu complex exhibits g value ( $g_{||} = 2.303$ ,  $g_{\perp} = 2.08$ ). The  $Cu(L_1)_2$  complex is distorted Octahedral. The g value between 2.3 to 2.5 which confirm the presence of mixed M-N and M-O bond in metal complex [10]. The shown in Figure-4 for the spectrum of  $Cu(L_1)_2$  complex.

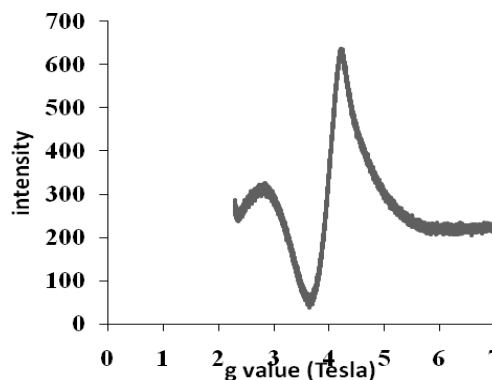


Figure 4: EPR Spectrum for  $Cu(L_1)_2$

#### 4. Conclusion

Schiff base ligand ( $L_1$ ) derived from 4-aminobenzoic acid with 3-bromo-5-chlorosalicylaldehyde respectively and their transition metal complexes of Co (II), Cu (II) and Mn (II). The ligands and their complexes have been characterized by spectral studies like (UV, FT-IR,  $^1\text{H-NMR}$  and EPR) and also analytical techniques. Based on the spectral data which can be used to assign the coordination of the metal complexes Mn(II) Octahedral and Co(II) and Cu(II) distorted Octahedral should be discussed. Which confirm the EPR spectrum one unpaired electron present in the Cu (II) complex is distorted octahedral geometry and also this study can be helpful to further studies of DNA binding, anti-microbial and anti-fungal activities of Schiff base metal complexes.

#### References

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