CHAPTER 5

Conclusions

1. Curcumin in 50% MeOH shows a characteristic absorption peak at 430 nm. This peak was changed in the presence of Cu(II), Fe(II), Fe(III), Hg(II), and Ni(II) which was taken as a sign of interaction between metal and ligand. The complexes of curcumin-Cu(II), curcumin-Hg(II), and curcumin-Ni(II) were readily formed with good stabilities whereas curcumin-Fe(II) and curcumin-Fe(III) were less stable, as seen by the unsteadiness of UV-Vis absorptions detected over 3 hours.
2. By the comparative studies of the reaction patterns of curcumin and its analogues we concluded that the metal binding site of curcumin was through the β-diketone part.
3. Complexation of curcumin-Hg(II) formed in the stoichiometry 1:1 with $\log K$ 4.60 and 2:1 for curcumin-Cu(II) and curcumin-Ni with $\log \beta$ 9.83 and 8.83, respectively.
4. The *correction calibration curve* developed in this work helps make it possible to use the continuous variation (Job’s method) and mole-ratio methods with the systems suffering from heavily overlapped absorption bands.