Investigation of Tautomeric Equilibria for the New Asymmetric Diimine Schiff Bases

Özlem GÜNGÖR, Perihan GÜRKAN
The University of Gazi, Faculty of Science & Arts, Chemistry Department, P.O. 06500, Ankara, Turkey
ozlemgungor@gazi.edu.tr

In the present study, the phenol-imine keto-amine tautomeric equilibrium of the asymmetric diimine Schiff bases (L-1, L-2, L-3) were investigated by IR, $^1$H-NMR, $^{13}$C-NMR, and UV-visible spectroscopies firstly. Three novel asymmetric diimines were synthesized with a new method developed by our group [1-2] and their structures have been characterized by spectroscopic methods (IR, NMR and mass spectra) and elemental analysis [3-5].

The UV-vis spectra of the compounds were taken in polar and non-polar solvents in acidic and basic media. The solvents were DMSO, methanol, chloroform, toluene and cyclohexane. It is pointed out that the new absorption bands occurring at >400 nm indicate the keto-amine form of the o-hydroxy Schiff bases [6-7]. While (L-1) shows absorption in the range >400 nm only in MeOH, L-2 and L-3, are a mixture of two tautomeric form in polar and non-polar solvents. These results are supported by $^1$H-NMR, $^{13}$C-NMR and UV data. IR spectral results show that all ligands are being phenol-imine tautomer in the solid state.

![Figure 1. Structures of the asymmetric diimines](image)

References