

## Synthesis of a novel fluorescent schiff base as a possible Hg and Ag ions selective sensor

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**Background and Aims:** Compounds with the structure of X-C=N-Y are known as Schiff base, which can be synthesized from the condensation of amine and active carbonyl. Schiff bases represent an important class of organic compounds, especially in the medicinal and pharmaceutical field. In this research, three novel chemosensors has been designed and synthesized for cations based on intramolecular charge transfer (ICT) mechanism.

**Methods:** 2-[4-(2-aminoethylthio) propylthio] ethanamine was obtained through reaction of 1,3 dibromopropan and cysteamine hydrochloride under argon atmosphere. 2-[4-(2-(2-hydroxy-1-naphtalimino) ethyl thio) propyl thio]2-hydroxy-1-naphtal imine as a chromophore, was easily prepared by condensation reaction of synthesized amine with substituted salicylaldehyde at room temperature for 1-4h and continued under reflux for 3-4h. Then, the prepared Schiff bases were used for chelating of heavy metals and their effects on changing of absorption and emission spectra were investigated in EtoH, DMF and Aceto nitril solvents.

**Results:** The UV-Vis absorption and fluorescence properties of Schiff base ligands and its complexes were investigated at room temperature in several solutions.

**Conclusions:** The disulfide group is well recognized as a potential binding site for metal ions in biological systems. It was observed that is 2-[4-(2-(2-hydroxy-1-naphtalimino) ethyl thio) propyl thio]2-hydroxy-1-naphtal imine capable of selective complexation with Hg and Ag ions which causes great changing in the emission intensity in fluorescence spectra as well as in absorption intensity in UV-Vis ones.

**Keywords:** Fluorescence spectra; Chelating; Schiff bases; Chromophores