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BIOGRAPHY

Sunita Hooda obtained her PhD degree in physical chemistry in 1992 from Indian Institute of Technology Delhi, India. She is presently, working as an associate professor in the Department of Chemistry, Acharya Narendra Dev College (University of Delhi). She has expertise in NMR studies of synthesized polymers. She publishes 53 research papers in reputed national and international journals. Her current research area of interest is "Synthesis of Polymeric and Heterocyclic Chemosensors for Cations, Anions and Molecules Recognition".

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CURCUMIN BASED FLUORESCENT CHEMOSENSOR FOR SELECTIVE DETECTION OF Cu^{2+} AND Hg^{2+} IONS IN AQUEOUS MEDIUM AND CELL IMAGING STUDY

Curcumin based fluorescent Schiff base chemosensor L2 (4,4'-((1E,3Z,5E,6E)-3-hydroxy-5-(thiazol-2-ylimino)hepta-1,3,6-triene-1,7-diyl)bis(2-methoxyphenol)) shows notable change in absorbance and emission spectra on screening with some metal ions (Fe^{3+} , Cu^{2+} , Ni^{2+} , Zn^{2+} , Cd^{2+} , Hg^{2+} , Pb^{2+} , Cr^{3+} , Mn^{2+} , Co^{2+} , Ag^{+} , etc.) in HEPES buffer. Binding constant for L2 + Cu^{2+} ($2.4 \times 10^5 \text{ M}^{-1}$) and L2 + Hg^{2+} ($7.46 \times 10^5 \text{ M}^{-1}$) which indicate good interaction of chemosensor with Cu^{2+} and Hg^{2+} ions. An interesting value of detection limit was observed with Cu^{2+} and Hg^{2+} ions, was to be 2.0 and 1.2 μM , respectively, which further clear the selectivity of the molecular probe towards Cu^{2+} and Hg^{2+} ions respectively. Detection of Cu^{2+} ions by chemosensor L2 in to biological cells was performed by using fluorescence cell-imaging study. Staining cells only with chemosensor exhibited intercellular fluorescence and upon the addition of Cu^{2+} ions the cells lost their fluorescence. The cell imaging studies clearly indicate that chemosensor L2 has good cell permeability and show the formation of L2- Cu^{2+} complex.