

Determination of phenytoin in human plasma sample by RP- HPLC method

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Phenytoin is an anticonvulsant drug, which is useful in the treatment of epilepsy. The primary site of action appears to be the motor cortex where spread of seizure activity is inhibited. Phenytoin reduces the maximal activity of brain stem centers responsible for the tonic phase of tonic-clonic (grandma) seizures. Literature reveals that analytical methods have been reported for quantitation of phenytoin from human serum using HPLC with fluorescence, Diode array detection. A sensitive and specific high-performance liquid chromatography method with ultraviolet detection (HPLC-UV) has been developed for the quantification of phenytoin in human plasma. The analyte was extracted from plasma samples with protein precipitation method. The samples are analyzed on a C18 column with the mobile phase of buffer (pH 3.2) and acetonitrile with the ratio of 10 : 90 (v/v). The calibration curves were linear within the range of 20-60 mcg/ml. The lower limit of quantitation was 100 ng/mL with 0.5 mL plasma sample. The mean recovery of the drug from plasma samples was 90.50%. This method was successfully used to analyze phenytoin in patient's plasma sample.

Biography

Narendra Kumar is a student of JSS College of Pharmacy, JSS University, Mysore. He has completed his B.Pharm from Srinivasarao College of Pharmacy Vishakapatnam, Andhra Pradesh. Presently he is pursuing M.Pharm Degree in the branch of Pharmaceutical analysis. His current area of research is on analytical method development of novel drugs using HPLC and GC.

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Discriminative detection of Cu²⁺ and Zn²⁺ ions by 4-piperazino-1,8-naphthalimide based fluorescent probe

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A new 4-piperazino-1,8-naphthalimide based fluorescent probe 1 has been synthesized and its crystal structure determined. The absorbance and fluorescence characteristics of 1 in aqueous and non-aqueous media were explored. Amongst several metal ions like Li⁺, Na⁺, K⁺, Cu²⁺, Mg²⁺, Ca²⁺, Cr³⁺, Mn²⁺, Fe²⁺, Co²⁺, Ni²⁺, Zn²⁺, Cd²⁺, Hg²⁺ and Pb²⁺ in aqueous environment, probe 1 acts as a turn-off chemosensor towards Cu²⁺. Whereas in non-aqueous environment, the probe 1 acts as a turn-on chemosensor for Zn²⁺ and a turn-off chemosensor for Cu²⁺ and thereby, enables the naked-eye detection of Cu²⁺ and Zn²⁺ ions. The significance of solvent interactions in Cu²⁺ and Zn²⁺ specific sensing has been emphasized. Selective turn-off sensing of Cu²⁺ *via* metal ion displacement and paramagnetic quenching has also been demonstrated.

Biography

Narendra Reddy Chereddy received his M.Sc degree in Analytical Chemistry from the Andhra University, Vishakhapatnam in 2006. Since 2009, he has been a Junior Research Fellow in CSIR-Central Leather Research Institute, Chennai and involved in the synthesis and development of rhodamine and fluorescein based chemosensors for the detection of toxic metal ions in environmental and biological samples. He is now a Senior Research Fellow in CSIR-Central Leather Research Institute, Chennai.

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