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DEVELOPED HPTLC-DENSITOMETRIC FOR THERAPEUTIC DRUG MONITORING

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ABSTRACT

Therapeutic drug monitoring (TDM) supported carrying out of patient safety program in hospital. One factor can be restricted an application of TDM in a small hospital is lack of existence of analytical instrumentation. HPTLC-densitometric is one of inexpensive, robust, and easy to implemented analytical method. We developed the use combination of HPTLC-densitometric and multiple use of Solid Phase Extraction (SPE)-cartridge for TDM. In the first study we used phenytoin as an analytical target and SPE-C18 for extraction. Phenobarbital was used as internal standard, HPTLC Si_{60} GF_{254} as stationary phase and mobile phase was combination of ethyl acetate-methanol-ammonia, 85:10:5 v/v/v. The drug extracted from plasma by multiple using of one SPE-cartridge and methanol-acetonitrile (2:3, v/v) as eluent. Phenytoin concentrations linear were within range 100-3200 ng per spot with LOD and LOQ 146.327±1.669 ng and 487.758±5.563 ng respectively. Ten times using of one SPE-cartridge for phenytoin extraction still gave better recovery. Application this method can reduce the analytical cost.