Simple Thin-Layer Chromatographic and UV-Spectrophotometric Analysis of Promethazine and its N-Demethylation Metabolites from Biological Fluids

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Abstract: Several Ultra-Violet spectrophotometric analytical method has been made available in the analysis of phenothiazine group of drugs but Thin-Layer Chromatographic techniques are not fully utilized. Hence, we were able to develop a succinct, simple and cost-effective TLC and UV-spectrophotometric quantification method for the analysis promethazine and metabolites from biological fluids, validating previous studies. The proposed method was found to be precise, accurate and phenotypic determination and categorization were successfully estimated among the test samples. From the chromatogram intensities, 33.3% of the study population were classified as poor metabolizers, 40% were intermediate metabolizers, and 26.67% extensive metabolizers. Little or no elimination of N-desmethylpromethazine was observed for subjects with poor metabolism in correlation with the severity. Therefore, the phenotypic knowledge will help in the clinical choices as an individual from the same family may likely metabolize a giving drug in the same manner due to their genetic similarities.
Keywords : Promethazine, Metabolites, Thin-Layer Chromatography, cytochrome P450.

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