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Therapeutic Monitoring on Urinary Nucleoside and Polyamine Levels of Cancer Patients by CE and GC under Acupuncture Treatment

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Modified nucleosides and polyamines excreted in urine are well-known as biochemical markers for cancer. The metabolomics on the urinary nucleosides and polyamines is thus gaining interest in the cancer study. In this study, the levels of nucleosides and polyamines in urine samples from cancer patients under acupuncture treatment were determined by high resolution capillary electrophoresis and gas chromatography, respectively. The usefulness of the metabolic profiling analyses of urinary nucleosides and polyamines together for the therapeutic monitoring of cancer patients under acupuncture treatment will be demonstrated.

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Simple and Sensitive Determination of Baclofen in Human Plasma by Column-Switching and Semi-Micro High-Performance Liquid Chromatography

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Purpose : Using a column-switching technique, highly sensitive and selective semi-micro high-performance liquid chromatographic (HPLC) method has been developed for the determination of baclofen in human plasma.
Method : Following precipitation of plasma sample containing baclofen with zinc sulfate-acetonitrile, samples were directly injected on to the system. The analyte was retained in an enrichment column while endogeneous plasma components were eluted to waste. Baclofen was then back-flushed to the semi-micro C18 analytical column for separation and quantification with ultraviolet detector at 220 nm. Used mobile phases for pretreatment and separation were 20 mM potassium phosphate (pH 2.0) and 20 mM potassium phosphate (pH 3.6)-methanol (82:18, v/v), respectively.
Results : The analysis time of one sample was approximately 23 min. The calibration curves were linear in the concentration range of 25-800 ng/ml. The limit of quantitation for the baclofen was 25 ng/ml. The inter- and intra-day reproducibility (CV%) are less than 12%, even at the limit of quantification of the method. The method showed good speed, sensitivity, and reproducibility. After an oral dose of 25 mg of baclofen, blood sample was collected at several time points and plasma was analyzed using the method developed in this study.
Conclusions : This method presented is a simple column switching HPLC UV detection method for the determination of baclofen in plasma. The method showed speed, sensitivity, and reproducibility. The method has been applied to a pharmacokinetic study with great success.

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