

[PD4-1] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

The Role of Sphingolipids Cycle in Hydrogen Peroxide-Induced Apoptosis in HL-60 Cells

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Sphingolipids and their metabolites are highly bioactive molecules that affect various cellular functions including differentiation, cellular senescence, apoptosis, and proliferation when added exogenously, or elevated intracellularly by turnover of complex sphingolipids or synthesis from de novo pathway. We are investigating the relationship of sphingolipids cycle in apoptosis early events. A new column liquid chromatography-tandem mass spectrometry (LC/MS/MS) in combination with multiple reaction monitoring (MRM) method was developed for the rapid, simultaneous and quantitative determination of unambiguous detecting sphingolipids in cells. In early stage of apoptosis, we monitored that sphingolipids cycle was activated by hydrogen peroxide. The cell death signal was mediated by reduction of sphingosine via the intra-cellular levels of ceramides were dramatically induced by hydrogen peroxide.

[PD4-2] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

A Rapid Quantitative Assay of Intact Ambroxol Tablets by FT-NIR Spectroscopy

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A simple analytical procedure using FT-NIR for the rapid determination of individual ingredients was evaluated. Direct measurements were made by reflection using a reflectance accessory, by transmittance using tablet accessory and turn table. FT-NIR spectral data were transformed to the first derivative. Partial Least Square Regression (PLSR) was applied to quantify near-infrared (NIR) spectra of 2 ingredients. These calibration models were cross-validated (leave-one-out approach). The prediction ability of the models was evaluated on ambroxol tablets and compared with the real values in manufacturing procedure. The PLSR loading spectra showed characteristic absorption bands for the different ingredients. Models were selected by better performance with root mean square error of calibration (RMSEC), root mean square error of prediction (RMSEP) and R^2 that accurately and precisely predicted. FT-NIR spectroscopy allowed for the rapid, accurate and non-destructive analysis of ingredient in tablets and could be applied in quality control of pharmaceutical products or monitor for adulteration or contamination.

[PD4-3] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Simultaneous Profiling Analysis of Fatty Acids in Serum of Normal Controls and Patients with Osteoporosis by Gas Chromatography-Mass Spectrometry

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Osteoporosis is the most common form of metabolic bone disease and is an important cause of morbidity and mortality in the elderly and especially in postmenopausal women. The possible beneficial action of essential fatty acids and their metabolites both in the prevention and treatment of osteoporosis needs attention. Therefore in this study, fatty acid levels of the normal groups was compared with those of patients. And then star symbol plots were drawn based on the fatty acids values of patients normalized to the corresponding normal group values to transform into visual patterns discriminating from the normal pattern. Finally, canonical discriminate analysis was performed on the fatty acid levels to see separation of the individual serum samples into clusters in a canonical plot. In this study, the usefulness for fatty acid profiling analysis will be discussed.