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Sphingolipid species are important second messengers due to their role in the mitogenesis, differentiation and apoptosis. We developed a new column liquid chromatography-triple quadrupole tandem mass spectrometry (LC-MS/MS) in combination with multiple reaction monitoring (MRM) method for the rapid, simultaneous and quantitative determination of unambiguous detecting sphingolipids in cell culture of human cancer cells (HL-60). Triple quadrupole mass spectrometry equipped with a turbo ion spray source. 23 sphingolipid species can be identified in a single run with a limit of detection (LOD) of 6.0 to and 15.0 pg for ceramide and sphingolipid derivatives. The developed LC-MS/MS method allows the sensitivity, selectivity and rapid monitoring of sphingolipid species in cell matrices with a dramatically reduced time for sample preparation, a simple run and a safety.

[PD4-34] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

EVALUATION OF NON-INVASIVE BLOOD GLUCOSE MEASUREMENT USING THREE TYPES OF NEAR INFRARED SPECTROMETER

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Three types of near infrared spectrometer, a photo diode array type, a dispersive type and a FT type, were evaluated and compared the systematic difference in blood glucose measurement. The fundamental study was performed by adding glucose to buffer solution and bovine blood as the preceding study of non-invasive blood glucose. Spectra were collected using a 1.0 mm optical pathlength quartz cell by transmittance method. Partial least squares (PLS) regression analysis was used to build proper calibration models for glucose contents in buffer solution and bovine blood. Based on the fundamental study, non-invasive blood glucose monitoring in human body was developed. The comparison results of each spectrometer show the potential of non-invasive blood glucose monitoring using near infrared spectrometer.

[PD4-35] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

HPLC를 이용한 Lysozyme chloride의 함량분석에 관한 연구

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The aim of this work was to develop an reverse-phase method for the analysis lysozyme contents. This method was sensitive and reproducible. The experimental samples were 8 kinds of capsules and one tablet, collected in domestic area.
The results were summarized as follows.
1. Calibration curve showed a good lineality(r=0.999) in 5~200 ㎍/㎖ of standard solutions.
2. The recovery rates were greater than 97.0%.
3. The reverse-phase HPLC assay employed an acetonitrile gradient in trifluoroacetic acid. The limits of detection and quantification were 5.0 ㎍/㎖, 15.0 ㎍/㎖.
4. The results of content by HPLC method were similar to turbidimetric assay but there were not good correlation between them.