1. Determination Cortisol in Human Plasma by LC/MS/MS Analysis

Description:

Cortisol is a neutral steroid that acts as a stress hormone in the body. Cortisol in human plasma is useful biomarkers to the physiological function of sleeping to human. The measurement of cortisol hormone in human plasma or urine is important to the research of sleeping disorders.

Cortisol in Human plasma was extracted by Solid Phase Extraction (SPE), separated by High Performance Liquid Chromatography (HPLC), and analyzed by Mass Spectrometry (MS) in Electrospray Ionization (ESI) source at positive ionization mode. Multiple Reaction Monitoring (MRM) of cortisol transition was used for the quantification of cortisol. The deuterated stable isotope Cortisol-d_4 was utilized as internal standards for the quantification analysis.

Performances

Lower limit of Quantization (LOQ): 0.5 ng/mL
Linear range: 0.5 – 250 pg/mL ($R \geq 0.999$)

Precision (CV%)

Intra-assay CV: See table
Inter-assay CV: See table

Concentration	Intra assay, RSD(%)	Inter assay, RSD(%)
Sub-low Level (0.95ng /mL)	9.34	14.22
Low Level (13.28ng/mL)	12.79	9.43
Medium Level (57.7ng/mL)	7.00	5.96
High Level (182ng/mL)	8.07	6.73