1. Determination Hydrocortisone (Cortisol) in Urine by LC/MS/MS Analysis

Description: Cortisol is a neutral steroid that acts as a stress hormone in the body. Cortisol is a useful biomarker to the physiological function of sleeping to human and there is a high demand for its measurement in human urine for research dealing with sleep disorders.

Cortisol in human urine is 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 for Cortisol. Multiple Reaction Monitoring (MRM) of transition was used for the quantification of cortisol. Deuterated stable isotope Cortisol-d_4 was utilized as internal standards for the calibration of cortisol for the quantification analysis.

Performances

Lower limit of Quantization (LOQ): 1.0ng/mL
Linear range: 1 – 100ng/mL ($R \geq 0.999$)

Precision (CV%)

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

Concentration	Intra assay, RSD(%)	Inter assay, RSD(%)
LLOQ Level (0.95 ng/mL)	7.7	19.5
Low Level (24.38 ng/mL)	3.5	5.6
Medium Level (55.80 ng/mL)	5.5	4.6
High Level (98.00 ng/mL)	3.3	4.3