1. Determination Progesterone in Human Serum by LC/MS/MS Analysis

Description: Progesterone is a C-21 steroid hormone involved in the female menstrual cycle, pregnancy and embryogenesis of humans and other species. Progesterone is the major naturally occurring human progestogen.

Analysis the progesterone in human serum is useful for determining whether ovulation occurred in a menstrual cycle, assessment of placental function in pregnancy and workup of some patients with adrenal or testicular tumors

Progesterone in human serum are extracted by Solid Phase Extraction (SPE), separated and eluted by High Performance of Liquid Chromatography (HPLC), and determinated by Mass Spectrometry (MS) in Electrospray Ionization (ESI) source at positive ionization mode and multiple reaction monitoring (MRM) of transition. Deuterated stable isotope d9-progesterone is utilized as internal standards for the calibrations of progesterone.

Performances

Lower limit of Quantization (LOQ):
Linear range: ($R \geq 0.999$) 0.05 – 10ng/mL

Precision (CV%)

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

Concentration	Intra assay, RSD(%)	Inter assay, RSD(%)
Sub Low Level (0.085 ng/mL)	7.83	10.75
Low Level – 0.29ng/mL	5.76	5.31
Middle Level - 3.07µg/mL	5.75	5.26
High Level - 7.25µg/mL	9.33	8.30