

Analysis of Free Norepinephrine and Epinephrine in Human Plasma by LC/MS/MS Analysis

Free NE and E in human plasma were pretreated by protein precipitation for removing plasma protein; the supernatant is evaporated and reconstituted by reductive ethylation labeling reagents (with d₄- acetaldehyde) to form ethyl derivatives of NE and E before LC/MS/MS analysis; the d₄-acetaldehyde labeled NE and E are separated by High Performance Liquid Chromatography (HPLC), and determined by Mass Spectrometry (MS) in Electrospray Ionization (ESI) source at positive ionization mode. Multiple Reaction Monitoring (MRM) of transitions are used for the quantification of NE and E. Deuterated stable isotopes NE – d₆ and E-d₆ are utilized as internal standards for the calibration of NE and E respectively for the quantification analysis.

Collection Considerations

Plasma Catecholamines are stable for up to 1 year at -80° C. For longer storage the use of EDTA and sodium metabisulfite is recommended as a preservative. *Contact lab for details*

Performances

Lower limit of Quantization (LOQ): 2.5pg/mL

Linear range: 2.5 – 5000pg/mL (R ≥0.999)

Precision (CV%)

Epinephrine	Intra assay, RSD(%)	Inter assay, RSD(%)
Low level (5pg/mL)	8.30	11.7
Middle level (50pg/mL)	4.30	7.05
High level (500pg/mL)	2.35	6.07
Up high level (5000pg/mL)	5.12	8.07

Norepinephrine	Intra assay, RSD(%)	Inter assay, RSD(%)
Low level (5pg/mL)	10.41	8.77
Middle level (50pg/mL)	4.36	7.53
High level (500pg/mL)	4.49	13.22
Up high level (5000pg/mL)	7.05	11.29

References

Boosma, Frans. "Optimal Collection and Storage Conditions for Catecholamine Measurements in Human Plasma and Urine." *Clinical Chemistry* 39.12 (1993): 2503-508. Print.

<http://clinchem.aaccjnl.org/content/clinchem/39/12/2503.full.pdf> Retrieved 2017-06-05