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Catecholamines in Plasma LC-MS/MS Analysis Kit

Plasma catecholamines including epinephrine (E), norepinephrine (NE), and dopamine (DA) are used to evaluate adreno-sympathetic function in patients. Quantification of plasma catecholamine concentrations is clinically important for the diagnosis of pheochromocytoma and paraganglioma during dynamic clonidine tests. The low circulating concentrations of catecholamines and analytical interferences require tedious sample preparation and long chromatographic runs to ensure their accurate quantification by HPLC with electrochemical detection. The reliable and simultaneous analysis of a broad panel of catecholamines is a powerful tool for the investigation of the hormone status, which is relevant for a variety of clinical questions and diagnoses.

Highlights of the Analysis Kit

- Simultaneous measurement the concentrations of 3 catecholamines
- Total run time is 10.5 min.
- Sample preparation steps without using SPE
- Each catecholamine safeguarded by its own internal standard
- Long life span of HPLC column

Parameters

Epinephrine, Norepinephrine and Dopamine

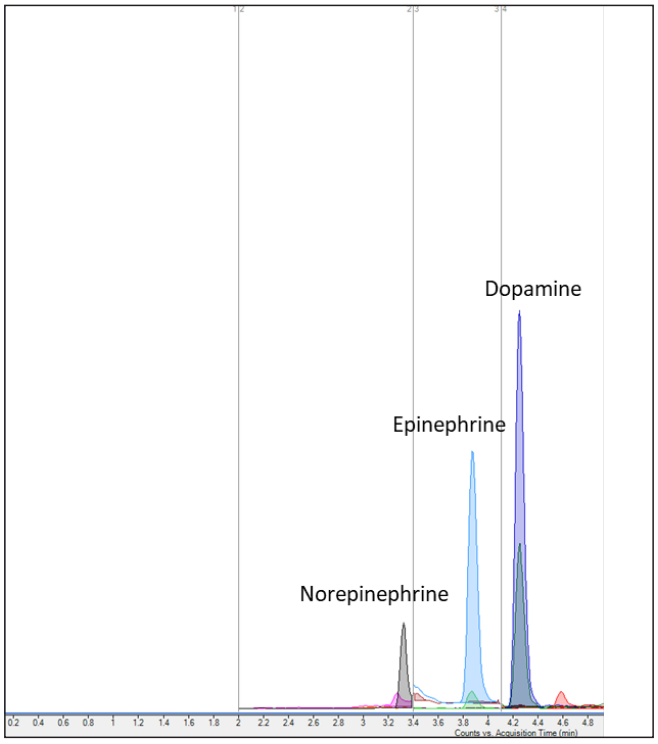
Sample Type

Plasma

Sample Preparation

1	Pipette 300 µL of plasma sample (calibrator or control) into a glass centrifuge tube then add 20 µL of internal standard solution and vortex for 5 sec.
2	Add 600 µL of Reagent-1 and vortex for 15 sec. then, add 1 ml of Reagent-2. After agitating for 3 min. at room temperature, centrifuge at 4000 rpm for 2 min.
3	Discard 700 µL of the upper phase and add Reagent-3 (solid) to the tube before vortexing 30 sec.
4	Add 200 µL of Reagent-4 and 2 ml of Reagent-5 into the tube
5	Shake the tube for 7 min. at room temperature after that, centrifuge at 4000 rpm for 3 min.
6	Evaporate 1.6 ml of upper phase to dryness
7	Reconstitute using 100 µL of Reagent-1 and transfer to the inserted HPLC vial prior to injection

Example Chromatogram



Extracted ion chromatogram of the analysis

Method Performance

All validation results were obtained using Agilent 6470 TQ system

Analytes	LOQ (ng/L)	Linearity (ng/L)	Recovery (%)	Repeatability (%CV)
Epinephrine	29.1	102.0 – 594.0	98	4,6
Norepinephrine	38.5	347.0 – 2222.0	98	4,9
Dopamine	19.3	92.9 – 564.0	99	3,5

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