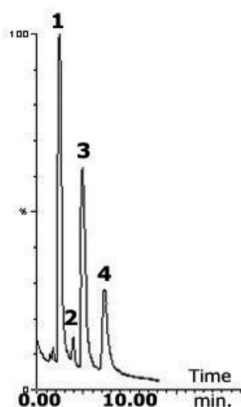
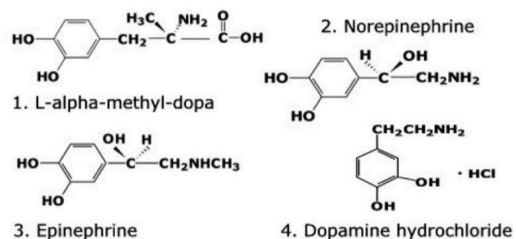


Catecholamines

Analysis by LC-MS



Notes: The concentration of catecholamines and their metabolites in plasma or brain are useful for diagnosis and evaluation of therapeutic and pharmacodynamic effects for psychiatric, neurological and cardiovascular disorders. The use of mass spectrometry for detection in the analysis of catecholamines is an effective approach due to the lack of a suitable chromophore on these molecules making UV detection difficult. In addition mass spectrometry provides positive identification of each component. The analysis (total ion chromatogram) of a four- component catecholamine mixture on Cogent Bidentate C18 column is shown.

Method Conditions

Column: Cogent Bidentate C18™, 4µm, 100Å

Catalog No.: 40018-75P

Dimensions: 4.6 x 75 mm

Mobile Phase: Acetonitrile/ 25 mM ammonium formate 5:95, pH=4

Injection vol.: 1µL

Flow rate: 0.5 mL/min

Detection: Mass Spec: Atmospheric Pressure Chemical Ionization in the Positive mode: APCI+

Samples: 10µg were dissolved in 1 mL of the mobile phase, except the concentration of norepinephrine was 3µg/mL in mobile phase.

Peaks: 1. L-alpha- methyl - dopa
2. Norepinephrine
3. Epinephrine
4. Dopamine hydrochloride

Discussion

Table below: Major peaks in mass spectra of solutes used in the study.

Solute	Parent Ion m/z	Other peaks
1. L-alpha- methyl - dopa	212	MH ⁺
	194	MH ⁺ ·H ₂ O
2. Norepinephrine	152	MH ⁺ ·H ₂ O
	135	MH ⁺ ·2H ₂ O
3. Epinephrine	184	MH ⁺
	166	MH ⁺ ·H ₂ O
	148	MH ⁺ ·2H ₂ O
4. Dopamine hydrochloride	154	MH ⁺
	136	MH ⁺ ·H ₂ O

This Method is easy, robust, and very effective.