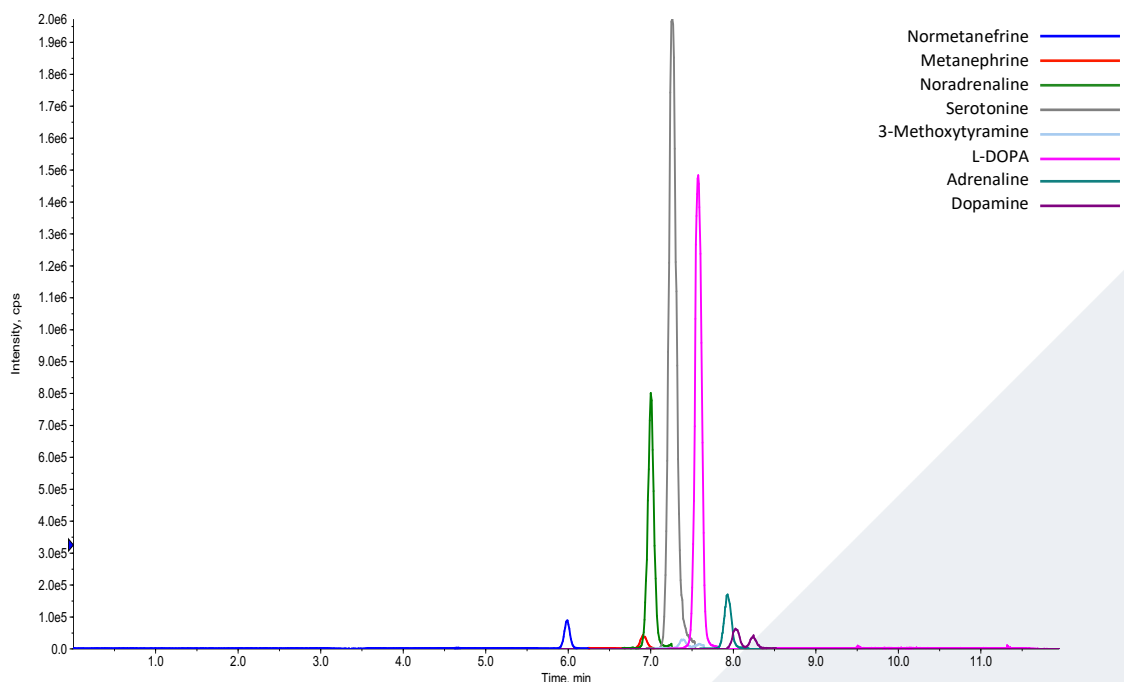


FLOMASS[®] BIOGENIC AMINES IN PLASMA

Catecholamines (Adrenaline, Noradrenaline and Dopamine) are neurotransmitters produced by the adrenal gland. Once released in the body, they induce physiological changes including an increase in heart rate and blood pressure. The release of these molecules also involves bronchodilation, tachypnea and reduction of insulin resulting in the release of glucagon which is converted into blood glucose. However, their excessive production in the blood can be a symptom of pheochromocytoma, neuroblastoma and, occasionally, of other neuroectodermal tumors.

Serotonin is a neurotransmitter produced at the gastrointestinal level, mainly involved in the sleep/wake cycle, hunger/satiety, intestinal motility, mood, memory and libido. It is also considered the molecule that regulates good mood and for this reason it is also known as the "happiness hormone". A lack of serotonin leads to fibromyalgia, a disease characterized by pain and perennial muscle tension, at the origin of stiffness and difficulty in movements. An excess of serotonin instead leads to serotonin syndrome, characterized by headache, agitation, confusion, tremors, muscle twitching, chills, tachycardia, sweating, nausea and diarrhea. L-DOPA is the precursor of Dopamine, from which all the other Biogenic Amines are then produced through the enzymatic activity of the organism. It is also administered to mitigate the effects of Parkinson's disease, as this disease leads to a progressive decrease in dopamine production due to the degradation of neurons present in the "substantia nigra".



HPLC-MS/MS system conditions

Ionization: ESI positive mode

MS/MS: specific MRM

Injection volume: 45 µL (variable according to instrumental sensitivity)

Running time: 12 min

Column heater: 45°C

Sample preparation

- Prepare a mix with 2 µL of Internal Standard Mix + 8 µL of Dilution Solution sufficient for the number of samples to be analyzed
- Add 100 µL of plasma in a vial
- Add 10 µL of Mix Solution obtained in previous step of the procedure
- Vortex for 5 sec and add 200 µL of Precipitant Solution
- Vortex 5 sec and centrifuge at 12000 rpm for 10 min
- Transfer 100 µL of supernatant in a new vial, add 250 µL of Buffer solution and 50 µL of Reagent solution
- Put it in the orbital shaker for 15 min at room temperature
- Add 150 µL of Stabilizing Solution and vortex for 5 sec
- Transfer the supernatant to the autosampler vial
- Inject 45 µL and analyze with HPLC-MS/MS technique

Performance

ANALYTE	LINEARITY (ng/L)	LLOD (ng/L)	LLOQ (ng/L)	CV% INTRA	CV% INTER
Adrenaline	2.24 – 11000	0.670	2.24	4.0 – 7.5	5.3 – 5.5
Noradrenaline	8.39 – 44000	2.52	8.39	4.1 – 6.9	3.9 – 5.8
Dopamine	1.33 – 4400	0.400	1.33	2.3 – 7.4	5.5 – 6.8
Metanephrine	3.19 – 4400	0.96	3.19	4.1 – 7.8	5.8 – 7.6
Normetanephrine	3.53 – 11000	1.06	3.53	4.6 – 9.4	4.7 – 12.4
3-Methoxytyramine	2.35 – 2200	0.700	2.35	5.8 – 6.8	9.5 – 13.0
L-DOPA	0.020 – 550	0.010	0.020	1.2 – 6.2	4.9 – 6.5
Serotonin	1.36 – 11000	0.410	1.36	1.0 – 7.5	4.2 – 5.7

Ordering guide

EUM23100	FloMass® Biogenic Amines in Plasma	100 assays
EUM23041	7-Levels Calibrators, lyophil.	2 x 7 x 1.0 mL
EUM23051	2-Levels Controls, lyophile.	2 x 2 x 1.0 mL
EUM00C22	Chromatographic Column	1 pc
EUM00S02	Loading Column	1 pc

CHR-07-22-REV.0