

FLOMASS[®] FREE 2,5-HEXANDIONE IN URINE

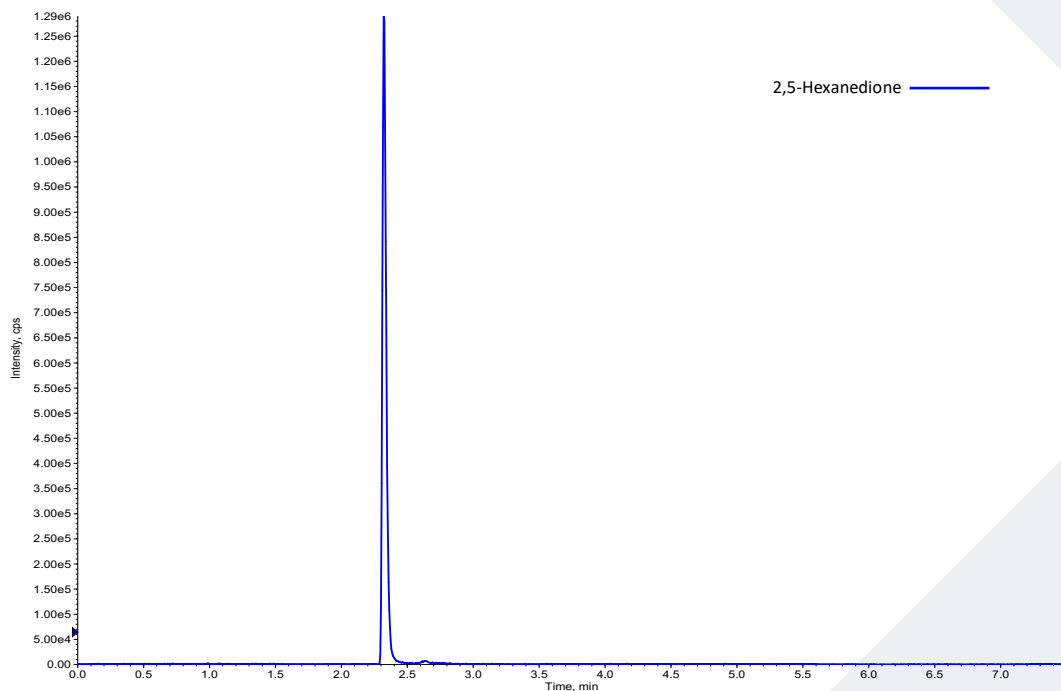
Chronic exposure to n-hexane, a solvent widely used in glues, paints, varnishes, printing inks, polyethylene and polypropylene sheets, plastics, rubbers, tires and footwear manufacturing, can lead to serious system damage nerve, classified as a distal central peripheral degenerative axonopathy.

Occupational exposure occurs mainly by inhalation, while dermal absorption occurs only by direct contact with the skin.

The metabolism of n-hexane in humans consists of a series of oxidative steps leading to the formation of numerous metabolites including 2,5-HD, then eliminated in the urine after conjugation.

Toxicological studies have demonstrated that 2,5-HD is the cause of peripheral neuropathies.

In recent years, total 2,5 HD is no longer considered the best biomarker of n-hexane exposure because the hydrolysis step also converts the non-toxic metabolites of n-hexane to 2,5 HD, thus leading to overestimation of the result and. For this reason, free 2,5-HD is now considered more reliable parameter than total 2,5-HD.



HPLC-MS/MS system conditions

Ionization: ESI positive mode

MS/MS: specific MRM

Injection volume: 2-20 µL (variable according to instrumental sensitivity)

Running time: 7.50 min

Column heater: 50°C

Column conditioning: column should be conditioned for 5 min at chromatographic gradient initial condition. Then, run 3 blank injections (MPA only) using the gradient as indicate in IFU

Sample preparation

- Prepare a mix with 15 µL Internal Standard + 170 µL Diluting Solution sufficient for the number of samples to be analyzed
- Pipette 185 µL solution mix as previously prepared in a vial
- Add 15 µL sample and vortex
- Transfer the content in an autosampler vial
- Inject 2-20 µL according to instrumental sensitivity and analyze with HPLC-MS/MS technique

Performance

ANALYTE	LINEARITY (µg/mL)	LLOD (µg/mL)	LLOQ (µg/mL)	CV% INTRA	CV% INTER
2,5-HD	0.04 – 10.0	0.01	0.04	1.4 – 5.5	4.8 - 7-2

Ordering guide

EUM28200	FloMass® free 2,5-Hexandione in Urine	200 assays
EUM28041	6-Levels Calibrators, lyophil.	2 x 6 x 0.5 mL
EUM27051	2-Levels Controls, lyophil.	2 x 2 x 1.0 mL
EUM00C28	Chromatographic Column	1 pc

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