

QUANTITATIVE AMINO ACIDS ANALYSIS

Analysis of free amino acids have applications of various fields, at the beginning of this diagnosis of inherited metabolic disorders, feeding newborn with a metabolic disorder inherited comes from studies. Furthermore, amino acid analysis in diagnosis problems such as liver and kidney disorders, intestinal microflora disorder, nov problems are performed.

43 amino acids are performed at 7.5 minutes with Jasem quantitative amino acids analysis kit for only one injection. Serum / plasma and urine samples are becoming ready for analysis at 5min.

In addition, Jasem method allows diagnosis of maple syrup urine disease (MSUD) by second injection of the same vial from the prepared sample. The second run provides excellent chromatographic separation of allo-isoleucine in order to correct quantification.

QUANTITATIVE AMINO ACIDS ANALYSIS

PARAMETERS:

Alanine, arginine, aspartic acid, asparagine, 2-amino-butyric acid, argininosuccinic acid, anserine, 2-amino-adipic acid, 3-amino-isobutyric acid, beta-alanine, ethanolamine, phenylalanine, phosphoserine, o-phosphroyl ethanolamine, gamma aminobutyric acid, glutamic acid, glycine, glutamine, hydroxyproline, homocitrulline, homocysteine, histidine, hyroxylysine, isoleucine, carnosine, lysine, leucine, methionine, 3-methylhistidine, 1-methylhistidine, norvaline, ornithine, proline, cystine, cystathionine, sarcosine, citrulline, serine, taurine, tryptophan, tyrosine, threonine, valine.

MATRIX: Serum, plasma, urine

FEATURES

Allows analysis without derivatization.

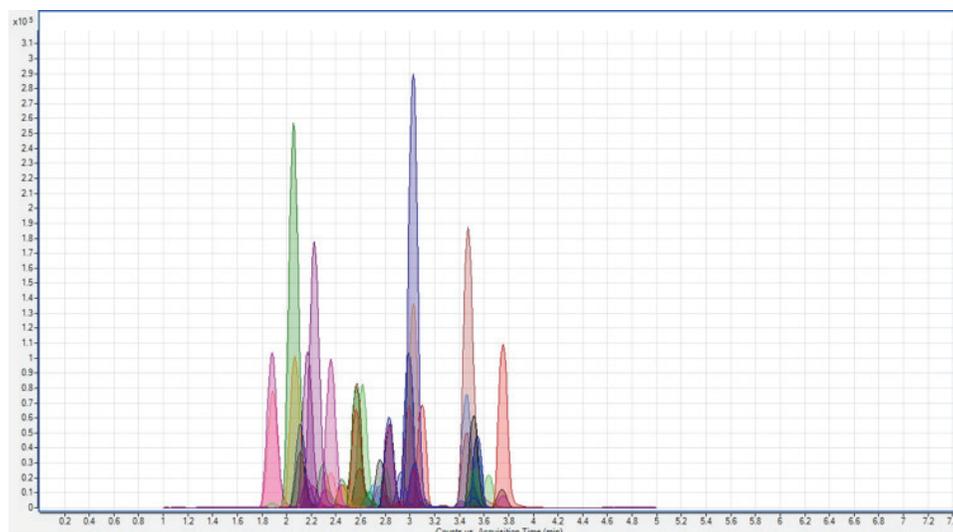
Fast and simple preparation, no need SPE.

Long lifetime HPLC column.

Short analysis time (total analysis time 7.5min).

Allow analysis allo-isoleucine for maple syrup disease diagnosis with only second injection.

NO	AMINO ACÍDS	LOQ (nmol/ml)	Recovery (%)	Repeatability (%)
1	Tryptophane	0.23	117	3.68
2	Taurine	5.47	85	4.81
3	Phenylalanine	0.73	110	3.73
4	Tyrosine	3.34	101	4.09
5	Leucine	0.20	97	4.62
6	Isoleucine	0.22	107	1.13
7	Methionine	0.41	90	3.70
8	Gamma-aminobutyric acid	0.07	104	8.49
9	3-Amino-isobutyric acid	0.15	100	6.49
10	Norvaline	0.15	95	4.90
11	2-Amino-adipic acid	0.83	94	2.23
12	Beta alanine	1.00	90	7.22
13	Ethanolamine	0.56	106	5.79
14	Aspartic acid	1.06	96	3.96
15	L-2-aminobutyric acid	0.22	94	4.71
16	Threonine	0.72	97	3.99
17	Serine	0.89	100	5.39
18	Alanine	6.82	104	4.44
19	Glycine	9.08	101	2.24
20	Asparagine	0.46	91	3.71
21	Trans-4-hydroxy-L-proline	0.28	102	1.90
22	Glutamine	0.32	98	3.58
23	Sarcosine	4.38	113	2.16
24	Proline	0.67	100	3.66
25	Homocitrulline	0.89	105	3.50
26	Citrulline	0.51	93	3.42
27	Homocysteine	0.31	103	5.32
28	Cystine	0.97	100	4.39
29	Cystathionine	0.25	104	5.81
30	Arginine	0.15	107	3.66
31	Histidine	2.43	54	1.49
32	Ornithine	1.39	96	3.34
33	DL-5- hydroxylysine	0.30	104	1.64
34	Lysine	0.09	114	4.52
35	Carnosine	0.12	93	2.56
36	3-Methylhistidine	0.30	100	4.49
37	1-Methylhistidine	0.20	78	2.94
38	Anserine	0.21	107	3.72
39	O-phosphoserine	0.12	99	6.20
40	Glutamic acid	0.24	98	9.30
41	Valine	5.11	42	4.68
42	Argininosuccinic acid	0.62	87	3.75
43	Orthophosphoryl ethanolamine	2.56	90	2.96
44	Allo-isoleucine	0.04	101	1.51



Extracted chromatogram of amino acids-spiked serum sample

Sample preparation

- STEP 1**
 - Pipet 50 μ L serum or urine sample into a centrifuge tube
- STEP 2**
 - Add 50 μ L internal standard solution and 700 μ L Reagent-1 onto sample and vortex for 10 seconds
- STEP 3**
 - Centrifuge at 4000 rpm for 5 minutes
- STEP 4**
 - Decant the supernatant into HPLC vial and inject into the system



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