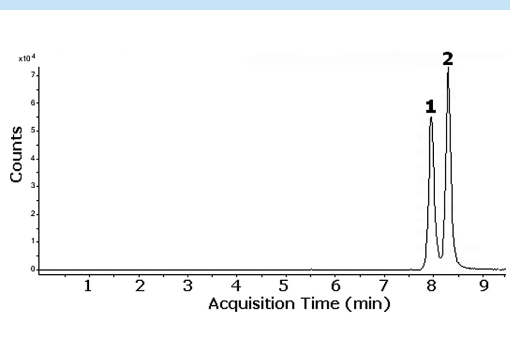
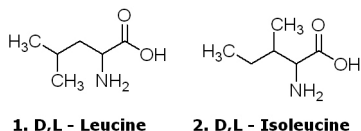


Branched-chain amino acids (BCAAs)

Leucine, Isoleucine



Chromatogram presented is adapted from: J.J.Pesek, M.T. Matyska, S. M. Fisher, T. R. Sana, *Journal of Chromatography A*, 1204 (2008) p50.

Notes:

D,L - Leucine and D,L - Isoleucine are considered essential amino acids because human beings cannot survive unless these amino acids are present in the diet.

Method Conditions

Column: Cogent Diamond Hydride™ 4µm, 100Å.

Catalog No.: 70000-15P-2

Dimensions: 2.1 x150 mm

Solvents: A: DI water + 0.1% acetic acid
B: acetonitrile + 0.1% acetic acid

Mobile phase: Gradient:

0 min 85% B	7–8 min to 70% B
0–2 min 85.0% B	8 to 9 min 70% B
2–3 min to 80% B	9–10 min to 50% B
3–5 min 80%B	10–11 min 50% B
5–6 min to 75%B	11–11.1 min to 20% B
6–7 min 75% B	11.1–14 min hold 20% B

Post time: 5 min

Flow rate: 0.4 mL/min.

Sample: 1. D,L - Leucine 132.1025 m/z (M + H)⁺
2. D,L - Isoleucine 132.1025 m/z (M + H)⁺
100 ng/mL of each prepared in 50%A/50%B and diluted 1:10 before analysis.

Detection: ESI – pos - Agilent 6210 MSD TOF mass spectrometer.

Discussion

The chromatogram presented was done using a Cogent Diamond column and an ANP gradient. The addition of weak acetic acid to the mobile phase allows the small difference in the pK_as of the two compounds to be used to achieve the resolution for this pair of analytes which have identical m/z values. A few microliters of serum suffices to estimate the leucine and isoleucine present. The two branched-chain amino acids are separated and can be easily quantified. The method is especially applicable to the frequent monitoring of serum in treating patients with maple-syrup disease, and may also be used for rapid diagnosis of the disease in suspected infants.

For more information visit www.MTC-USA.com

Cat. No.	Description
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70000-15P-2	Cogent Diamond Hydride™ HPLC Column, 100Å, 4µm, 2.1 x 150mm
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