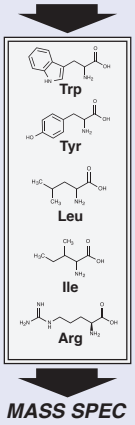
Intrada Amino Acid

Amino Acids Separation Column for LC-MS

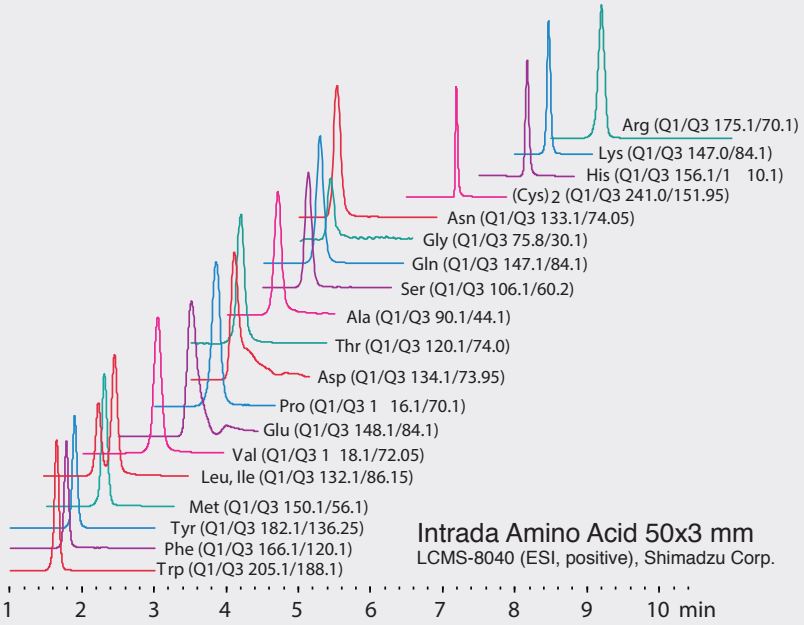
The world's first specialty column for intact amino acid analysis via LC-MS

- *LC-MS analysis of amino acids*
- *Amino Acid Analysis - No derivatization required*
- *Ability to separate isobaric amino acids such as Leu and Ile*
- *High-throughput (< 1 minute) analysis for selected amino acids*
- *5-10 minutes for protein amino acids analysis*
- *Pure spherical silica / 3um particles / unique stationary phase designed for amino acid*

No Derivatization



Separation of amino acids under 10 minutes using LC-MS/MS



Standard Amino acid mixture
100 nmol/mL

A: ACN / THF / 25 mM Ammonium formate / Formic acid = 9 / 75 / 16 / 0.3 (v/v/v/v)
B: ACN / 100 mM Ammonium Formate = 20 / 80 (v/v)

Gradient Conditions:
0%B (0-3 min)
0-17%B (3-6.5 min)
100%B (6.5-10 min)
0.6 mL/min, 40 °C, 1 μL (0.1N HCl)
ESI, positive

Imtakt has developed a novel column for the analysis of amino acids with LC-MS systems. The Intrada Amino Acid column achieves high-throughput analysis without tedious pre- or post-labeling methods. Optimization of analytical run times and resolution is accomplished by varying column dimensions. Separation of leucine and isoleucine isomers, GABA isomers, and dipeptide analysis is now possible without derivatization.

- *Separate free amino acids in mixtures*
- *Study protein amino acid composition*
- *Isolate amino acid bio-markers*

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Imtakt Corp./JAPAN (info@imtakt.com) *Other Countries*

LC-MS analysis for 55 amino acids in 10 minutes

- New stationary phase designed specifically for optimal amino acid and dipeptide separation
- No pre- or post-labeling methods required
- High throughput analysis via LC-MS
- Separation of isobaric amino acids on LC-MS systems is finally possible

55 Amino Acids (standard samples)

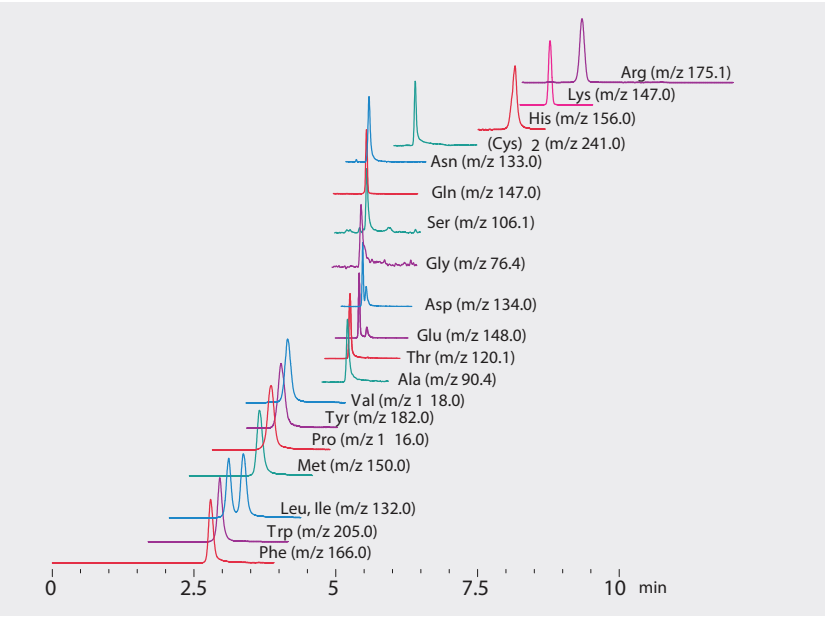
Intrada Amino Acid, 50 x 3 mm
A: ACN / THF / 25mM Ammonium formate / Formic acid = 9 / 75 / 16 / 0.3
B: ACN / 100mM Ammonium formate = 20 / 80

Gradient Conditions:
0 %B (0-2.5min)
0-17 %B (2.5-6.5 min)
100 %B (6.5-10 min)
0.6 mL/min (6MPa), 35 °C , 5 μL (1μmol/mL)
ESI (SIM, positive)

Various column dimensions enhance scalability and flexibility

- Mobile phase composition and gradient method can be optimized for sensitivity requirements and run times.
- Use of a shorter column allows for one minute analysis of non-isomer amino acids.

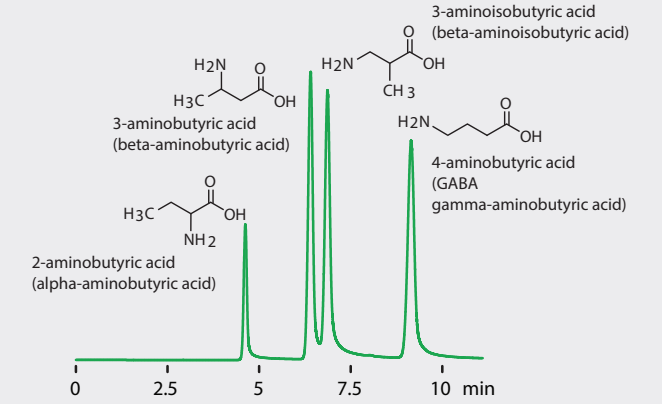
Example of simple elution method



Intrada Amino
Acid, 50 x 3 mm
A: ACN / Formic acid = 100 / 0.1
B: 100mM Ammonium formate

Gradient Conditions:
14 %B (0-3min)
14-100 %B (3-10 min)
14 %B (10-12 min)
0.6 mL/min, 35 °C, 5 μL
ESI, positive

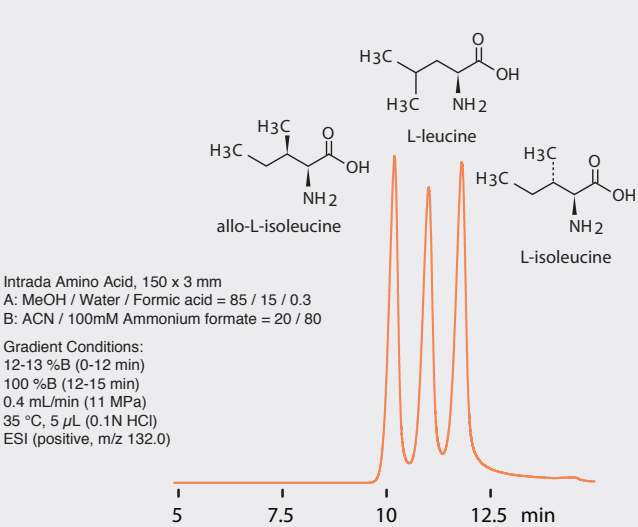
Separation of GABA (103Da) isomers



Intrada Amino Acid, 100 x 3 mm
A: ACN / Formic acid = 100 / 0.3
B: 100mM Ammonium formate

Gradient Conditions:
25-30 %B (0-12 min),
100 %B (12-15min)
0.4 mL/min (4MPa), 37 °C, 5 μL (0.1N HCl)
ESI (positive, m/z 104.1)

Separation of Leucine (131Da) isomers

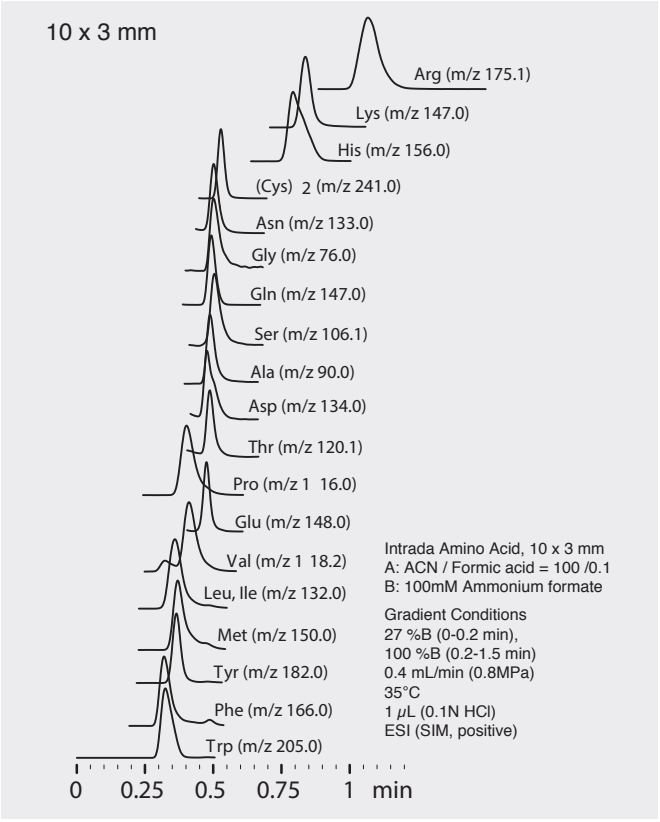


Intrada Amino Acid, 150 x 3 mm
A: MeOH / Water / Formic acid = 85 / 15 / 0.3
B: ACN / 100mM Ammonium formate = 20 / 80

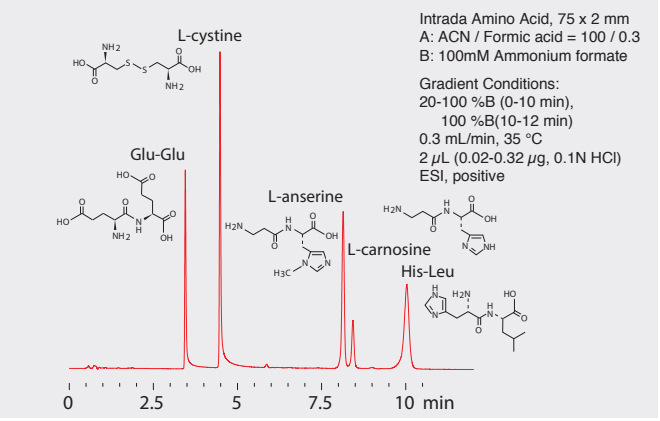
Gradient Conditions:
12-13 %B (0-12 min)
100 %B (12-15 min)
0.4 mL/min (11 MPa)
35 °C, 5 μL (0.1N HCl)
ESI (positive, m/z 132.0)

Intrada Amino Acid columns separate amino acid isomers quickly by using an optimized column length, as in the example of aminobutyric acid isomers (103Da) and leucine isomers (131Da) using 100-150mm length columns.

High-throughput analysis of standard amino acids



Dipeptide analysis



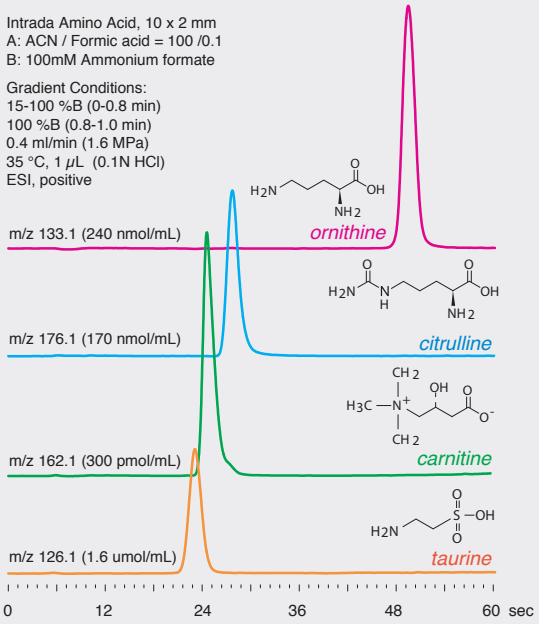
Intrada Amino Acid is an excellent choice for the analysis of polar dipeptides, which are notoriously difficult to retain and separate in conventional HPLC.

Product Information

Column I.D.	Column Length (depends on I.D.)
3mm, 2mm, 1mm	10mm, 20mm, 30mm
0.5mm - 0.075mm	50mm, 75mm, 100mm
	150mm, 250mm

Guard column system is not available for this product.

One-minute analysis of related compounds



Above: One minute ultra high-throughput analysis can successfully be performed on a 10mm length column.

Intrada Amino Acid high-throughput columns provide amazing speed, selectivity, and convenience. The next generation amino acid analysis method for clinical amino acid biomarkers, fermented materials, botanical amino acids is here.

Column Recommendations

- The Intrada Amino Acid column should be used only with LC-MS systems to achieve adequate peak identification.
- This product is not recommended for applications involving UV or ELSD instruments.
- Detection sensitivity is highly dependent upon MS instrument performance. LC-MS instruments should be carefully chosen to yield adequately sensitive data.
- Analysis of longer chain peptides that require high ionic strength mobile phases should use the Scherzo SS-C18 multi-mode ODS column.
- Please refer to the instruction packet for sample preparation procedures.

Imtakt USA