

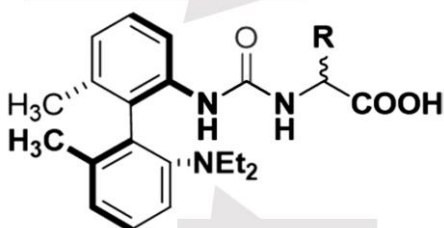
# D/L-Amino Acids Derivatization Reagent for LC/MS Analysis (*R*)-BiAC

Amino acids exist widely in living organisms and in nature and most amino acids exist as L-amino acids. In recent years, the functionality of D-amino acids, which exist as enantiomers in small amounts, has been clarified, such as their involvement in memory and learning ability<sup>1)</sup>. Therefore, the importance of separating D-amino acids from L-amino acids for analysis is increasing. (*R*)-BiAC is a derivatization reagent for the analysis of D/L-amino acids by LC/MS (pre-column derivatization method). By using (*R*)-BiAC, chiral amino acid analysis can be performed with high resolution in a short time (19 min.) without using dedicated equipment.

1) Hashimoto, A., Oka, T.: *Prog. Neurobiol.*, **52**, 325 (1997).

## Features

**Chiral selector**  
Separate 20 D/L-amino acids!

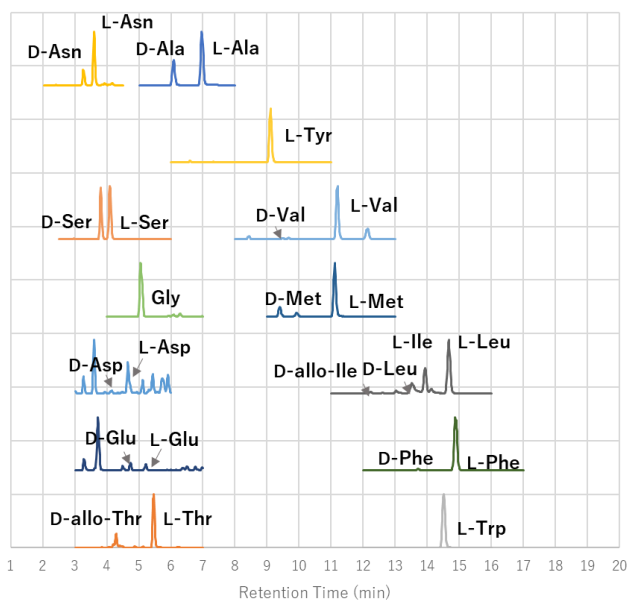


**Detection group**  
Increase ionization efficiency in MS!

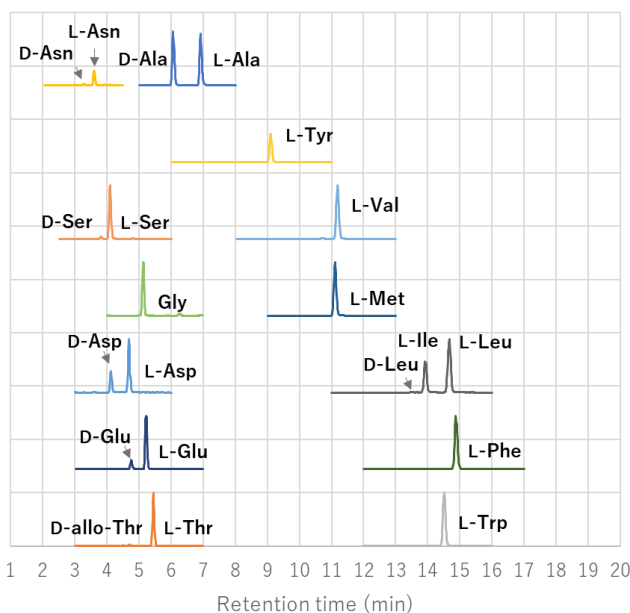
- ✓ Chiral amino acids can be measured by LC/MS without using dedicated equipment!
- ✓ Simultaneous analysis of 20 types of D/L-amino acids in about 19 min!
- ✓ Highly sensitive and detectable!

## Analysis Example

Analysis example of chiral amino acids in human urine



Analysis example of chiral amino acids in lactic acid bacteria drink



## Derivatization conditions

### Pretreatment

- 1) Sample/Standard solution 20  $\mu$ L + Internal standard solution 20  $\mu$ L + Acetonitrile 40  $\mu$ L
- 2) Stirring
- 3) Centrifugation (20,000  $\times g$ , 10 min.)

### Preparation

- 1) Supernatant 15  $\mu$ L + Buffer for (R)-BiAC<sup>+</sup>-acetonitrile solution 30  $\mu$ L + (R)-BiAC solution 10  $\mu$ L (Derivatized solution)
- 2) Pipetting  $\times 5$

### Reaction

- 1) Stirring
- 2) Heating (55°C, 10 min.)
- 3) Cooling (r.t.)

### Stop the reaction

- 1) Derivatized solution + Reaction Terminator\* 100  $\mu$ L

### LC/MS measurement

\* Reagent included in (R)-BiAC Derivatization Reagents Set (Code No. 296-86001).

## Analysis conditions

### [Instrument]

Shimadzu Nexera X2 HPLC System /  
Sciex Triple Quad™ 6500

### [HPLC]

Column: Wakopak® Ultra APDS TAG®  
 $\phi$ 2.1 mm  $\times$  100 mm

Column temperature: 40°C

Eluent: A) 0.1% HCOOH in 10 mM HCOONH<sub>3</sub> aq.,

B) 95% CH<sub>3</sub>CN in H<sub>2</sub>O

Gradient:

Time (min.)	B conc. (%)
0-3	14-16
3-14.3	16-33
14.3-17	33-45
17-17.1	45-90
17.1-18	90
18-18.1	90-14
18.1-20	14

Flow rate: 0.4 mL/min.

### [MS]

Ionization: ESI

Mode: SRM

## Product List

Code No.	Product Name	Grade	Volume
025-19761	(R)-BiAC	for Amino Acid Analysis	5 mg
296-86001	(R)-BiAC Derivatization Reagents Set	for Amino Acid Analysis	1 Set
018-19853	Acetonitrile	for LC/MS	3 L
235-64051	Wakopak® Ultra APDS TAG® $\phi$ 2.1 mm $\times$ 100 mm (D)		1 EA

Please check our website for details.

TOP > Analytical Chemistry > Amino Acid, Peptides & Proteins

[https://labchem-wako.fujifilm.com/us/category/analysis/aminoacid\\_peptidesproteins/index.html](https://labchem-wako.fujifilm.com/us/category/analysis/aminoacid_peptidesproteins/index.html)



Application data "Chiral Amino Acid Analysis Using LC/MS" written by Karakawa, S.,  
Ajinomoto Co., Inc.,

TOP > Wako blog <https://labchem-wako.fujifilm.com/us/wako-blog/038612.html>



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