FDAA, Marfey’s Reagent

48895

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>48895</td>
<td>FDAA, Marfey’s Reagent (1-fluoro-2-4-dinitrophenyl-5-L-alanine amide), 50mg</td>
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Molecular Weight: 272.19  
\( \lambda_{\text{max}}: 340\text{nm} \)

Storage: Upon receipt store product at room temperature.

Introduction

Thermo Scientific FDAA is a derivatization reagent that reacts with primary amines for UV detection. The resulting derivative is detected at 340nm with nanomole sensitivity. FDAA derivatives of D-amino acids exhibit strong intramolecular bonding, which reduces their polarity relative to the corresponding L-amino acid derivatives. Consequently, the D-derivatives are selectively retained on reverse phase columns and elute much later than corresponding L-derivatives.

FDAA derivatives can be separated with simple linear gradient of triethylamine phosphate/acetonitrile on a Spheri-5 RP-18 HPLC cartridge column. FDAA reduces the need for a chiral column because the D-derivatives are retained on the column, eluting after the L-derivatives. The derivatization is easy to perform and completed in 90 minutes, resulting in derivatives that are stable for at least 48 hours.

General Protocol for Derivatizing Primary Amines

A. Materials Required

- Acetone
- 1M Sodium bicarbonate
- 2M HCl
- 1mL Thermo Scientific™ Reacti-Vial™ Small Reaction Vial (Product No. TS-13221 clear; TS-13097 amber)
- Thermo Scientific™ Reacti-Therm™ Heater or other dry block heater

B. Sample Preparation

1. Place sample, 100µL of 5µmol, in a 1.0mL Reacti-Vial Small Reaction Vial.
2. Add 200µL of 1% FDAA in acetone.
3. Add 40µL of 1.0M sodium bicarbonate.
4. Heat at 40°C for 1 hour in a Reacti-Therm Heating Module.
5. Remove vial from the module and cool.
6. Add 20µL of 2M HCl. Sample is ready for analysis after degassing is complete.
C. Analysis Conditions

- HPLC cartridge column: Spheri-5 RP-18, 10 × 4.6cm
- A: 0.05M Triethylamine phosphate, pH 3.0
- B: Acetonitrile
- Linear gradient: 10-40% acetonitrile in 45 minutes
- Flow rate: 2.0mL/minute at 25°C
- Detection: 340nm

Related Thermo Scientific Products

48891   \textit{p}-Bromophenacyl-8 Reagent, 10mL
TS-18822 Reacti-Therm Heating Module (single block)
TS-18824 Reacti-Therm III Heating Module (triple block)
TS-13221 Reacti-Vial Small Reaction Vial, 1mL clear, 12/pkg
TS-13097 Reacti-Vial Small Reaction Vial, 1mL amber, 12/pkg

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