



# CERTIFICATE OF ANALYSIS

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## 1. Identification

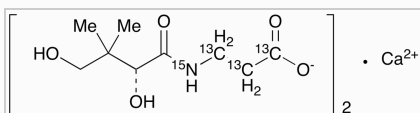
**Catalogue Number:** P190302

**CAS Number:** 356786-94-2

**Product:** Pantothenic Acid-13C3,15N Hemicalcium Salt

**Synonym:** N-[(2R)-2,4-Dihydroxy-3,3-dimethyl-1-oxobutyl]-?-alanine-13C3,15N Hemicalcium; (+)-Pantothenic Acid-13C3,15N Hemicalcium; (D)-(+)-Pantothenic Acid-13C3,15N Hemicalcium; D(+)-N-(2,4-Dihydroxy-3,3-dimethylbutyryl)-?-alanine-13C3,15N Hemicalcium; D-Pantothenic Acid-13C3,15N Hemicalcium; Pantothenic Acid-13C3,15N Hemicalcium; Vitamin B3-13C3,15N Hemicalcium; Vitamin B5-13C3,15N Hemicalcium;

**Structure:**



**Molecular Formula:**

$C_{12}^{13}C_6H_{32}Ca^{15}N_2O_{10} \cdot Ca_{2+}$

**Molecular weight:**

2 (222.20) +(40.08)

**Source of Product:**

Synthetic

**Solubility:**

Methanol (Slightly, Sonicated, Heated), Water (Slightly)

**Lot Number:** 43-OTM-51-1

**Purity:** 95%

**Shipping Condition:** This Product Is Stable To Be Shipped At Room Temperature

**Storage Condition:** -20°C

## 2. Warning

**Warning 1:**

**Warning 2:**

**Warning 3:**

## 3. Analytical Information

Tests:	Specifications:	Results:
Appearance	Off-White to Pale Beige Solid	Pale Beige Solid
NMR	Conforms to Structure	Conforms
N NMR	Conforms to Structure	Conforms
MS	Conforms to Structure	Conforms
Isotopic Purity	>95%	98.9% (d0 = 0.06%)
Elemental Analysis	Conforms	%C: 43.04, %H: 6.78, %N: 5.54
HPLC Purity	Report Result	98.80% (ELSD)
Water Content	Report Result	2.3% by Karl Fischer
Calcium Content	Report Result	7.54% by Ion Chromatography
Specific Rotation	Report Result	+23.7° (c = 0.2, Water)

**Additional Information:**

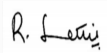
N/A

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of  $\pm 2\%$ . Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

#### 4. Signatures

**Reviewed By**

Swathi Reddy



**Reviewed By**

Toni Rantanen



**C of A Approved  
By**

Chanell Chu



**Test Date**

9/9/2021

**Retest Date**

9/7/2025