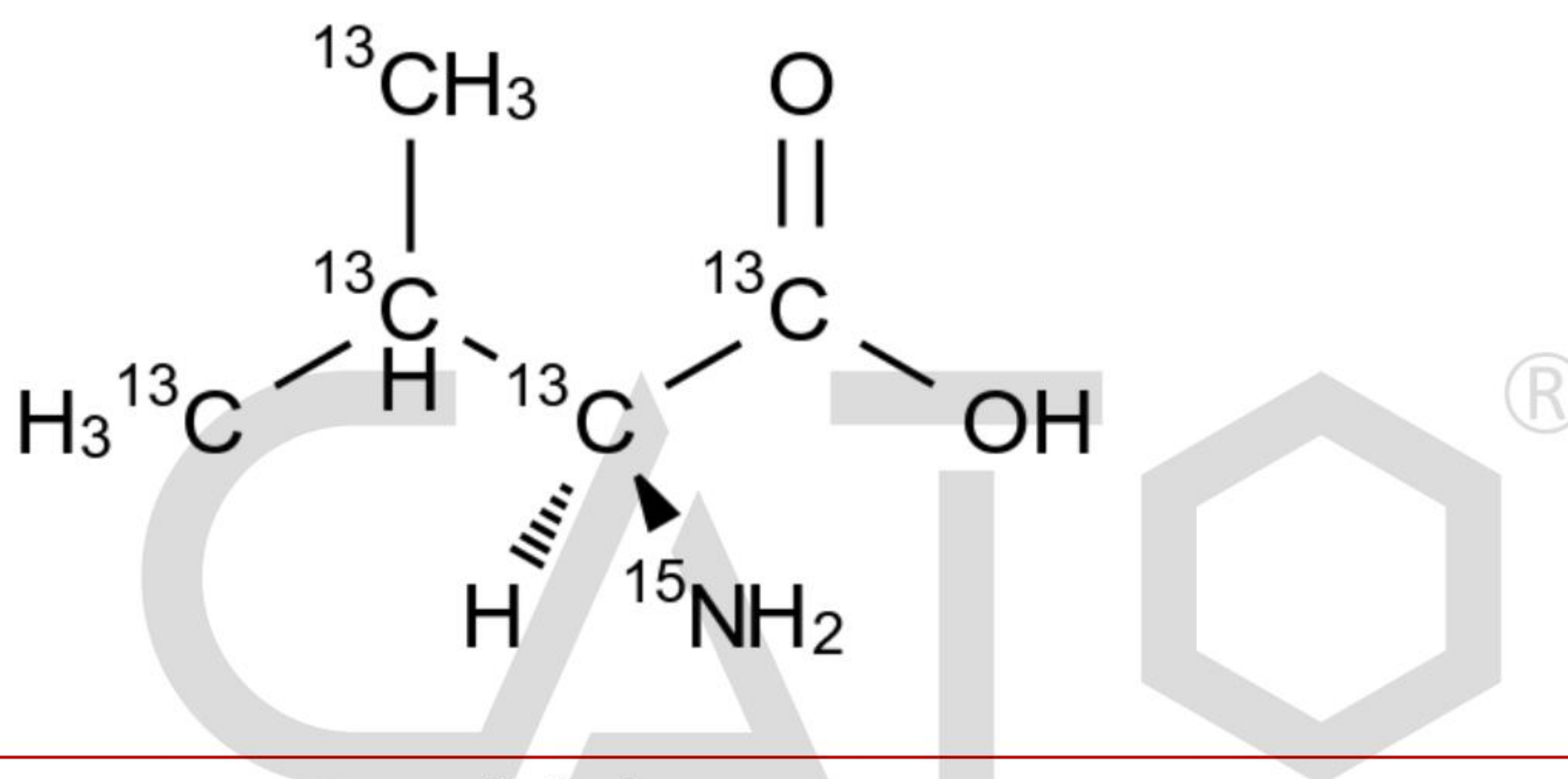


Certificate of Analysis

Reference Material & Standard

Product Name:	L-Valine-13C5, 15N	Catalogue Number:	CCFD202037
Synonyms:	N/A	Lot Number:	1229-RE-0002
CAS Number:	202407-30-5	Expiry Date:	Jan 16, 2028
Molecular Formula:	[13C]5H11[15N]O2	Storage:	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	123.10	Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Solid
Identification	LCMS&HNMR	Confirmed
Purity	HPLC	99.667%
Loss On Drying	TGA	0.1151%
Assay		99.6%
Uncertainty		±2.0%

Comment:

1. The calculation of the 100% method follows the formula (calculated on the non-dried basis):

Assay (%) = (100% - Loss On Drying) * Purity HPLC (%) / 100%

Loss On Drying is considered as absolute effect, HPLC purity is considered as relative effect.

2. The uncertainty values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Signature:

Prepared by:

Nice

Reviewed by:

Lisa

Approved by General Manager:

David

Date: Jan 17, 2024

Date: Jan 22, 2024

Date: Jan 22, 2024

