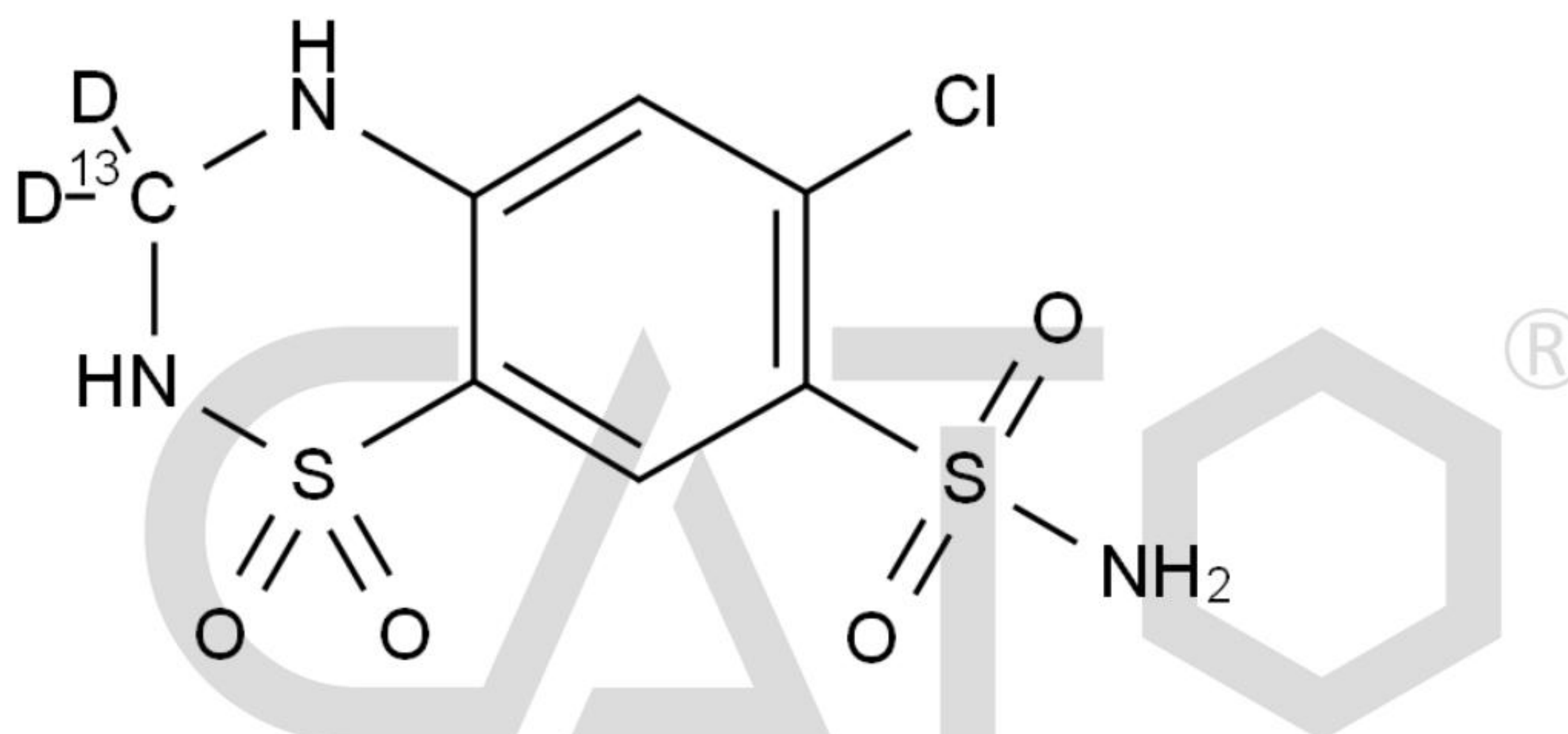


Certificate of Analysis

Reference Material & Standard

Product Name:	Hydrochlorothiazide-13C,d2	Catalogue Number:	CCAD302932
Synonyms:	N/A	Lot Number:	0619-RF-0006
CAS Number:	1190006-03-1	Expiry Date:	Jul 13, 2026
Molecular Formula:	C ₆ [¹³ C]H ₆ D ₂ ClN ₃ O ₄ S ₂	Storage:	-20°C±5°C Protected from light and Sealed
Molecular Weight:	300.74	Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White to Off-White Solid
Identification	LCMS&HNMR	Confirmed
Chemical Purity	HPLC	99.48%
Isotopic Purity		99.0%
Water Content	Karl Fischer	0.40%
Residual Solvents	NMR	0.4% isopropanol and 0.3% acetone
Assay		98.4%
Uncertainty		±2.0%

Comment:

- The compound contains 0.9% M+0 according to its LC-MS.
- The calculation of the 100% method follows the formula (calculated on the non-dried basis):

$$\text{Assay (\%)} = (100\% - \text{Water Content} - \text{Residual Solvents}) * \text{Purity HPLC (\%)} / 100\%$$
 Water Content and Residual Solvents are considered as absolute effect, HPLC purity is considered as relative effect.
- 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:

Lisa

Reviewed by:

Hin Lam

Approved by General Manager:

David

Date: Jun 21, 2024

Date: Jun 21, 2024

Date: Jun 21, 2024

