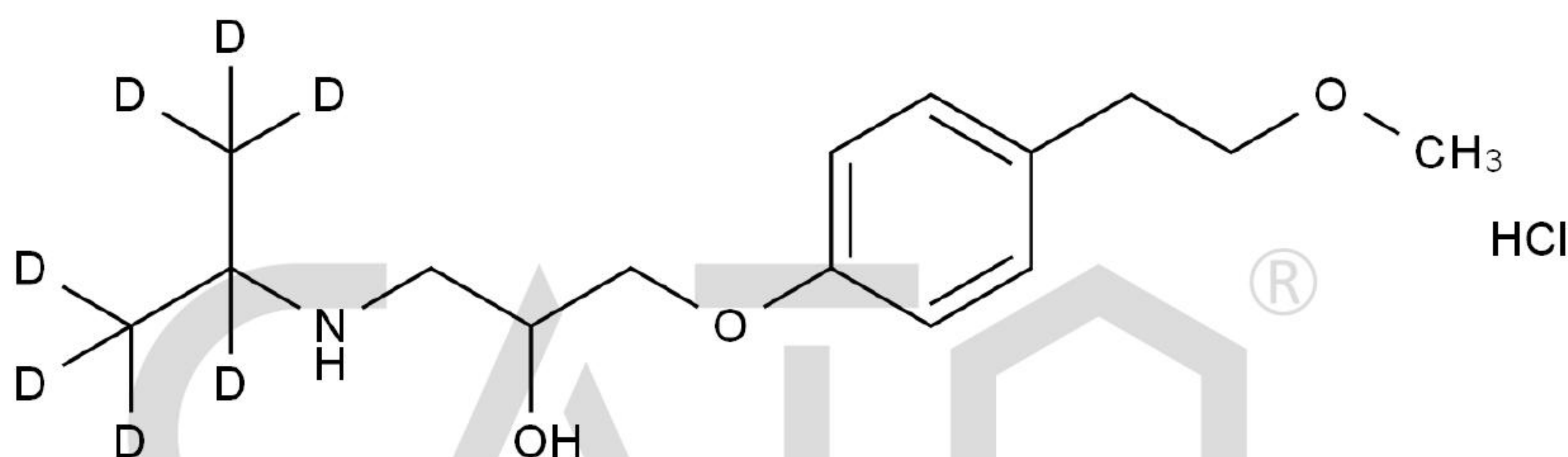


Certificate of Analysis

Reference Material & Standard

Product Name:	Metoprolol-D7 Hydrochloride	Catalogue Number:	CCAD301549
Synonyms:	N/A	Lot Number:	0320-RF-0034
CAS Number:	1219798-61-4	Expiry Date:	Mar 24, 2031
Molecular Formula:	C ₁₅ H ₁₈ D ₇ NO ₃ HCl	Storage:	-20°C±5°C Protected from light and Sealed
Molecular Weight:	274.41 36.46	Shipping Condition:	Shipping with Ice Packs(4个冰袋)

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White to Off-White Solid
Identification	LCMS&HNMR	Confirmed
Chemical Purity	HPLC	99.323%
Isotopic Purity		93.8%
Loss on Drying	TGA	4.1615%
Assay		95.2%
Uncertainty		±0.5%

Comment:

- The calculation of the mass balance method follows the formula (calculated on the non-dried basis):

$$\text{Assay (\%)} = (100\% - \text{Loss on Drying}) * \text{Purity HPLC (\%)} / 100\%$$

Loss on Drying is 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:

Nice

Reviewed by:

Lisa

Approved by General Manager:

David

Date: May 29, 2026

Date: May 29, 2026

Date: May 29, 2026



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