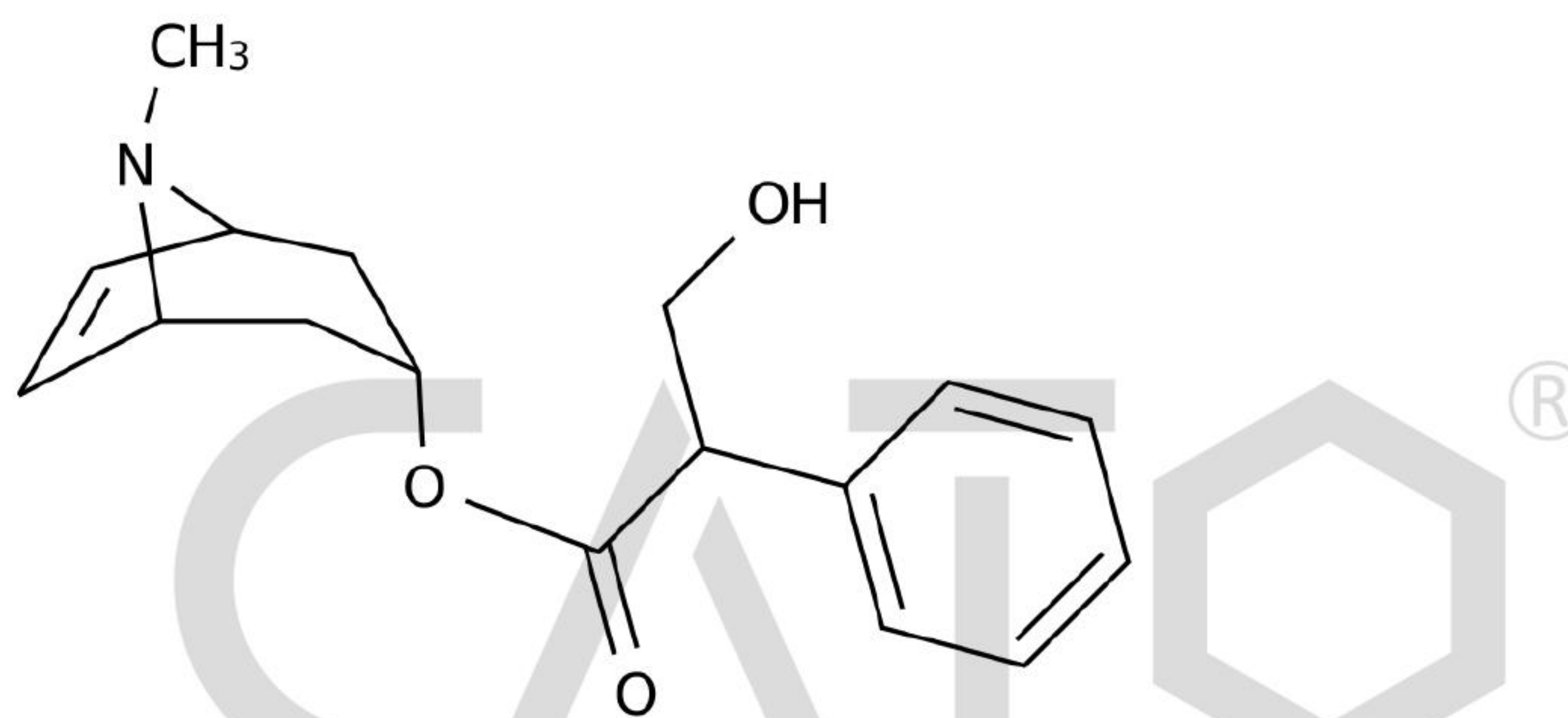


Certificate of Analysis

Reference Material & Standard

Product Name:	Tiotropium Bromide Impurity 23	Catalogue Number:	C4X-176423
Synonyms:	N/A	Lot Number:	1025-RC-0050
CAS Number:	54725-48-3	Expiry Date:	Nov 01, 2024
Molecular Formula:	C ₁₇ H ₂₁ NO ₃	Storage:	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	287.35	Shipping Condition:	Shipping at Room Temperature

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	White Powder
Identification	LCMS&HNMR	Confirmed
Purity	HPLC	98.7582%
Loss on Drying	TGA	0.3022%
Assay		98.5%

Comment:

The calculation of the mass balance 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.

Signature:

Prepared by:

Debia

Reviewed by:

Hinlam

Approved by General Manager:

David

Date: Nov 02, 2021

Date: Nov 02, 2021

Date: Nov 02, 2021



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