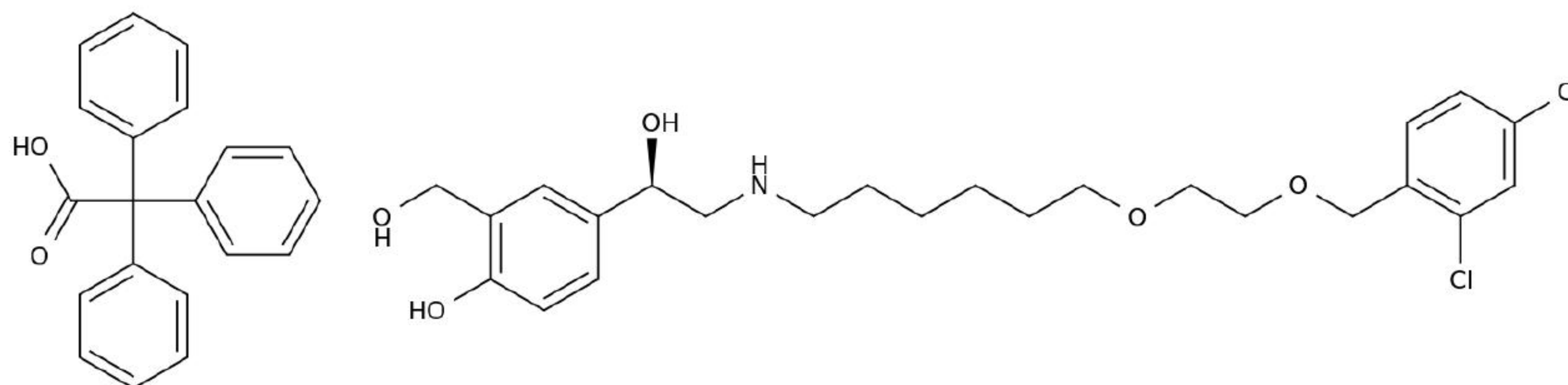


Certificate of Analysis

Reference Material

Product Name:	Vilanterol Impurity 27	Catalogue Number:	C4X-193527
Chemical Name:	N/A	Lot Number:	0519-RD-0036
CAS Number:	503068-65-3 (free base)	Expiry Date:	May 11, 2025
Molecular Formula:	C ₂₄ H ₃₃ Cl ₂ NO ₅ C ₂₀ H ₁₆ O ₂	Storage:	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	486.43 288.34		

Chemical Structure:



Test Items

Appearance

Identification

Purity

Water Content

Residual Solvents

Optical Rotation

Assay

Method

Visual inspection

LCMS&IR&HNMR

HPLC

Karl Fischer

NMR

Results

White to Off-White Solid

Confirmed

98.4853%

0.3%

Not detected in NMR

[α]_D^{22.0}(c=0.53, CH₃OH):
-15.5°

98.2%

Comment:

The calculation of the 100% method follows the formula:

Assay (%) = (100% - Water Content - Residual Solvents) * Purity HPLC (%) / 100%

Water Content and Residual Solvents are considered as absolute effect, HPLC purity is considered as relative effect.

Signature:

Prepared by:

Hin Lam

Reviewed by:

Cady

Approved by General manager:

David

Date: May 13, 2022

Date: May 20, 2022

Date: May 20, 2022

