



CERTIFICATE OF ANALYSIS

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1. Identification

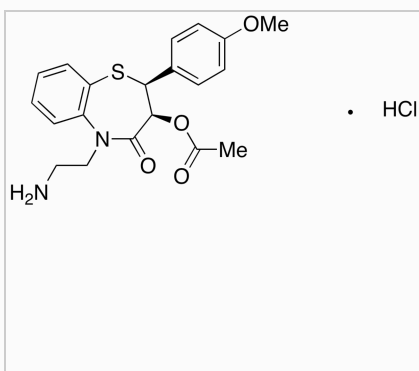
Catalogue Number: D441050

CAS Number: 116050-35-2

Product: N,N-Didesmethyl Diltiazem Hydrochloride

Synonym: (2S-cis)-3-(Acetyloxy)-5-(2-aminoethyl)-2,3-dihydro-2-(4-methoxyphenyl)-1,5-benzothiazepin-4(5H)-one Monohydrochloride; (2S,3S)-N,N-Didemethyldiltiazem Hydrochloride;

Structure:



Molecular Formula:

C₂₀H₂₃ClN₂O₄S

Molecular weight:

422.93

Source of Product:

Synthetic

Solubility:

Chloroform (Slightly), DMSO (Slightly), Methanol (Slightly)

Lot Number: 14-MVI-149-1

Purity: 95%

Shipping Condition: This Product Is Stable To Be Shipped At Room Temperature

Storage Condition: -20°C

2. Warning

Warning 1: Not Determined

Warning 2:

Warning 3:

3. Analytical Information

Tests:	Specifications:	Results:
Appearance	White to Off-White Solid	White Solid
NMR	Conforms to Structure	Conforms
Elemental Analysis	Conforms	%C: 52.50, %H: 5.40, %N: 6.06
MS	Conforms to Structure	Conforms
Specific Rotation	Report Result	+68.9° (c = 0.5, Chloroform)
HPLC Purity	>95%	98.70% (205 nm)

Additional Information: Elemental Analysis: (Theoretical) %C: 56.80, %H: 5.48, %N: 6.62

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of ± 2%. Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

4. Signatures

Reviewed By	Reviewed By	C of A Approved By	Test Date	Retest Date
Henry Tieu	Toni Rantanen	My Nguyen	9/9/2020	9/7/2027