

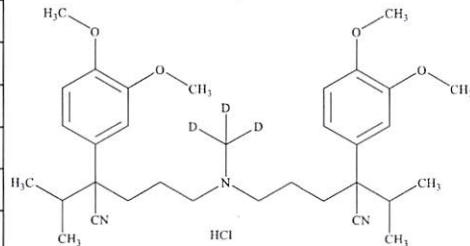
# Certificate of Analysis

Certificate No.: 20260622021



Date: June 22, 2026

Retest date: June 15, 2029

<b>Compound Name:</b> Verapamil EP Impurity N-d <sub>3</sub> HCl (Mixture of Diastereomers)	
<b>Synonyms:</b>	5,5'-((methyl-d <sub>3</sub> )azanediy)bis(2-(3,4-dimethoxyphenyl)-2-isopropylpentanenitrile), hydrochloride (1:1)
<b>TLC Catalogue Number:</b>	V-0444
<b>CAS Number:</b>	N/A
<b>Alternate CAS Number:</b>	2726492-31-3 (non-labelled)
<b>Molecular Weight:</b>	552.77 36.46
<b>Molecular Formula:</b>	C <sub>33</sub> H <sub>44</sub> D <sub>3</sub> N <sub>3</sub> O <sub>4</sub> . HCl
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	7495-028A1
<b>Storage Conditions:</b>	Store at 2-8 °C
<b>Solubility:</b>	Methanol, DMSO, DMF, Acetonitrile



Test Description	Specifications	Results
<b>Visual Description</b>	White to off-white solid	<b>Conforms</b>
<b>Identification</b>		
IR	Conforms to structure	<b>Conforms</b>
MS	Conforms to structure	<b>Conforms</b>
<sup>1</sup> H NMR	Conforms to structure	<b>Conforms</b>
<b>Purity (HPLC)</b>	Not less than 95.0%	<b>99.8%</b>
<b>Impurity (HPLC)</b>	N/A	
<b>Isotopic Enrichment</b>	Not less than 98.0%	<b>99.8%</b>
<b>Water Content (KF)</b>	N/A	<b>0.5%</b>
<b>Residual Solvents (NMR)</b>	0.3% ethyl acetate	
<b>Assay (%)</b>	Not less than 90.0%	<b>99.0%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		06/22/2026
Approved by:	Quality Assurance		06/22/2026

**Attachments:** Peak Attribution Table, Assay Calculation, HPLC, IR, MS and NMR spectra.