

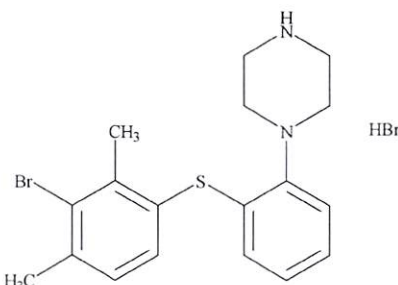
Certificate of Analysis

Certificate No.: 20240710013-2

Date: July 10, 2024



Retest date: July 8, 2027

Compound Name: Vortioxetine Impurity 38 HBr	
Synonyms:	1-(2-((3-bromo-2,4-dimethylphenyl)thio)phenyl)piperazine, hydrobromide (1:1)
TLC Catalogue Number:	V-043046
CAS Number:	2725536-51-4
Alternate CAS Number:	N/A
Molecular Weight:	377.35 80.91
Molecular Formula:	C ₁₈ H ₂₁ BrN ₂ S. HBr
Source:	TLC Pharmaceutical Standards
Source Lot No.:	3430-029A4
Storage Conditions:	Store at 2-8 °C
Solubility:	Methanol, DMSO, DMF



HBr

Test Description	Specifications	Results
Visual Description	Off-white solid	Conforms
Identification		
IR	Conforms to structure	Conforms
MS	Conforms to structure	Conforms
¹ H NMR	Conforms to structure	Conforms
Elemental Analysis	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	98.3%
Impurity (HPLC)	RT 12.20, 0.47%; RT 13.49, 0.28%; RT 15.48, 0.46%	
Water Content (KF)	N/A	0.3%
Residual Solvents (NMR)	0.3% methanol and 0.4% isopropanol	
Assay (%)	Not less than 90.0%	97.3%
Recommendation:	Release.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		02114/2025
Approved by:	Quality Assurance		02114/2025

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