

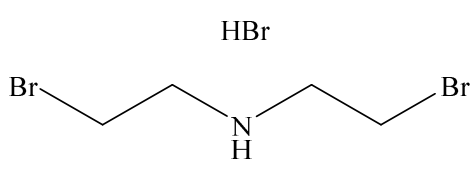
Certificate of Analysis

Certificate No.: 20180719013

Date: July 19, 2018

Retest date: July 2, 2021

Compound Name: Vortioxetine Impurity 36 HBr (Bis(2-Bromoethyl)amine HBr)	
Synonyms:	2-Bromo- <i>N</i> -(2-bromoethyl)-ethanamine, hydrobromide (1:1)
TLC Catalogue Number:	V-043044
CAS Number:	43204-63-3
Molecular Weight:	230.93 80.91
Molecular Formula:	C ₄ H ₉ Br ₂ N. HBr
Source:	TLC Pharmaceutical Standards
Source Lot No.:	2982-095A3
Storage Conditions:	Store at 2-8 °C.
Solubility:	Methanol, DMSO, Water



Test Description	Specifications	Results
Visual Description	White to off-white solid	Conforms
Identification		
MS	Conforms to structure	Conforms
¹ H NMR	Conforms to structure	Conforms
Elemental Analysis	Conforms to structure	Conforms
Water Content (KF)	N/A	0.9%
Melting point	198.5 °C ~199.0 °C	
Residual Solvents (NMR)	0.1% acetonitrile	
Assay (qNMR)	Not less than 90.0%	95.7%
Recommendation:	Released.	

Name	Department	Signature	Date
Reviewed and approved by:	Analytical Services		
Approved by:	Quality Assurance		

Attachments: MS and NMR spectra.