

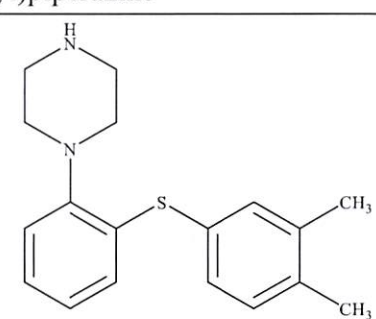
## Certificate of Analysis

Certificate No.: **20230707023**

Date: July 7, 2023

Retest date: July 6, 2026

<b>Compound Name:</b> Vortioxetine Impurity 6	
<b>Synonyms:</b>	1-(2-((3,4-dimethylphenyl)thio)phenyl)piperazine
<b>TLC Catalogue Number:</b>	V-043007
<b>CAS Number:</b>	1293489-74-3
<b>Molecular Weight:</b>	298.45
<b>Molecular Formula:</b>	C <sub>18</sub> H <sub>22</sub> N <sub>2</sub> S
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	4391-064A3
<b>Storage Conditions:</b>	Store at 2-8 °C
<b>Solubility:</b>	Methanol, DMSO



Test Description	Specifications	Results
<b>Visual Description</b>	Pale brown 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>99.0%</b>
<b>Impurity (HPLC)</b>	RT 3.80, 0.29%; RT 10.49, 0.26%; RT 14.76, 0.11%	
<b>Water Content (KF)</b>	N/A	<b>0.2%</b>
<b>Residual Solvents (NMR)</b>	0.3% isopropyl ether	
<b>Assay (%)</b>	Not less than 90.0%	<b>98.5%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		07 / 11 / 2023
Approved by:	Quality Assurance		07 / 11 / 2023

**Attachments:** HPLC, IR, MS and NMR spectra.