

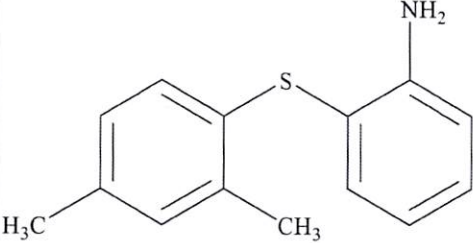
## Certificate of Analysis

Certificate No.: 20241204024



Date: December 4, 2024

Retest date: December 3, 2027

<b>Compound Name:</b> Vortioxetine Impurity 33	
<b>Synonyms:</b>	2-((2,4-dimethylphenyl)thio)aniline
<b>TLC Catalogue Number:</b>	V-043036
<b>CAS Number:</b>	1019453-85-0
<b>Molecular Weight:</b>	229.34
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>15</sub> NS
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	4802-065A1
<b>Storage Conditions:</b>	Protect from light, store at -20 °C
<b>Solubility:</b>	Methanol, DMSO



Test Description	Specifications	Results
<b>Visual Description</b>	Brown liquid	<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>Water Content (KF)</b>	N/A	<b>0.1%</b>
<b>Residual Solvents (NMR)</b>	0.4% dichloromethane	
<b>Assay (%)</b>	Not less than 90.0%	<b>99.3%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		12/05/2024
Approved by:	Quality Assurance		12/05/2024

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