

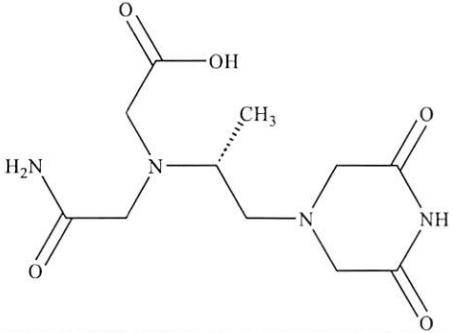
## Certificate of Analysis

Certificate No.: **20260107017**



Date: January 7, 2026

Retest date: May 30, 2028

<b>Compound Name:</b> Dexrazoxane Impurity 31	
<b>Synonyms:</b>	(R)-N-(2-amino-2-oxoethyl)-N-(1-(3,5-dioxopiperazin-1-yl)propan-2-yl)glycine
<b>TLC Catalogue Number:</b>	R-088034
<b>CAS Number:</b>	151852-24-3
<b>Alternate CAS Number:</b>	N/A
<b>Molecular Weight:</b>	286.29
<b>Molecular Formula:</b>	C <sub>11</sub> H <sub>18</sub> N <sub>4</sub> O <sub>5</sub>
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	6636-061A6
<b>Storage Conditions:</b>	Hygroscopic, store at 2-8 °C
<b>Solubility:</b>	DMSO, Water, DMF, Methanol



Test Description	Specifications	Results
<b>Visual Description</b>	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>98.4%</b>
<b>Impurity (HPLC)</b>	RT 3.29, 0.22%; RT 3.59, 0.38%; RT 3.85, 0.31%	
<b>Purity (Chiral HPLC)</b>	Not less than 95.0%	<b>95.5%</b>
<b>Optical Rotation</b>	N/A	[α] <sub>D</sub> <sup>25.0</sup> (c=0.47, DMF): <b>-13.0°</b>
<b>Residual Solvents (NMR)</b>	0.1% dichloromethane	
<b>Assay (qNMR)</b>	Not less than 85.0%	<b>88.0%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		01/07/2026
Approved by:	Quality Assurance		01/07/2026

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