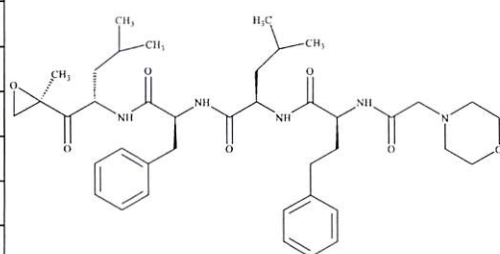


## Certificate of Analysis



Certificate No.: **20250624010**

Date: June 24, 2025

Retest date: June 23, 2028

<b>Compound Name:</b>	<b>Carfilzomib Impurity 22</b>	
<b>Synonyms:</b>	(R)-4-methyl-N-(((S)-1-(((S)-4-methyl-1-((R)-2-methyloxiran-2-yl)-1-oxopentan-2-yl)amino)-1-oxo-3-phenylpropan-2-yl)-2-((S)-2-(2-morpholinoacetamido)-4-phenylbutanamido)pentanamide	
<b>TLC Catalogue Number:</b>	C-121025	
<b>CAS Number:</b>	2049025-45-6	
<b>Alternate CAS Number:</b>	N/A	
<b>Molecular Weight:</b>	719.92	
<b>Molecular Formula:</b>	C <sub>40</sub> H <sub>57</sub> N <sub>5</sub> O <sub>7</sub>	
<b>Source:</b>	TLC Pharmaceutical Standards	
<b>Source Lot No.:</b>	3857-092A3	
<b>Storage Conditions:</b>	Store at 2-8 °C	
<b>Solubility:</b>	Methanol, DMSO, DMF	

Test Description	Specifications	Results
<b>Visual Description</b>	Pale yellow 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>98.2%</b>
<b>Impurity (HPLC)</b>	RT 4.49, 0.39%; RT 8.67, 0.56%; RT 11.11, 0.22%	
<b>Water Content (KF)</b>	N/A	<b>0.8%</b>
<b>Optical Rotation</b>	N/A	$[\alpha]_D^{25.0}(c=0.60, CHCl_3): +1.0^\circ$
<b>Residual Solvents (NMR)</b>	0.3% dichloromethane	
<b>Assay (%)</b>	Not less than 90.0%	<b>97.1%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		06/24/2025
Approved by:	Quality Assurance		06/24/2025

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