

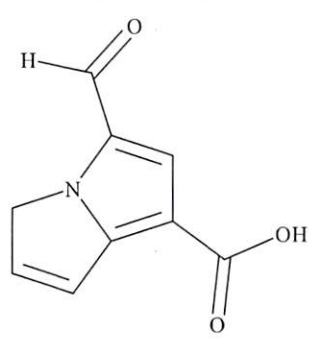
## Certificate of Analysis

Certificate No.: **20260622017**


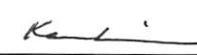
Date: June 22, 2026

Retest date: June 15, 2027

<b>Compound Name:</b> Ketorolac Impurity 29	
<b>Synonyms:</b>	5-formyl-3H-pyrrolizine-7-carboxylic acid
<b>TLC Catalogue Number:</b>	K-0349
<b>CAS Number:</b>	N/A
<b>Alternate CAS Number:</b>	N/A
<b>Molecular Weight:</b>	177.16
<b>Molecular Formula:</b>	C <sub>9</sub> H <sub>7</sub> NO <sub>3</sub>
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	7480-057A3
<b>Storage Conditions:</b>	Protect from light and air, store at -20 °C
<b>Solubility:</b>	DMSO



Test Description	Specifications	Results
<b>Visual Description</b>	Pink 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>97.1%</b>
<b>Impurity (HPLC)</b>	RT 9.67, 2.20%; RT 15.01, 0.12%; RT 18.06, 0.11%	
<b>Water Content (KF)</b>	N/A	<b>0.2%</b>
<b>Residual Solvents (NMR)</b>	0.5% ethyl acetate and 0.2% acetonitrile	
<b>Assay (%)</b>	Not less than 90.0%	<b>96.2%</b>
<b>Recommendation:</b>	<b>Release.</b> The compound contains 2.2% isomeric impurity (RT 9.67) according to its HPLC and LC-MS.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		06/22/2026
Approved by:	Quality Assurance		06/22/2026

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