

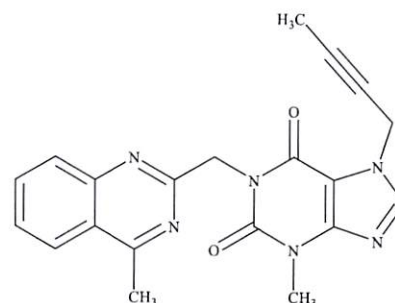
## Certificate of Analysis

Certificate No.: 20260408512


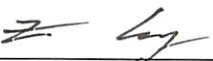
Date: April 8, 2026

Retest date: April 7, 2029

<b>Compound Name:</b> Linagliptin Impurity 16	
<b>Synonyms:</b>	7-(but-2-yn-1-yl)-3-methyl-1-((4-methylquinazolin-2-yl)methyl)-3,7-dihydro-1H-purine-2,6-dione
<b>TLC Catalogue Number:</b>	L-4433
<b>CAS Number:</b>	1911621-52-7
<b>Alternate CAS Number:</b>	N/A
<b>Molecular Weight:</b>	374.40
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>18</sub> N <sub>6</sub> O <sub>2</sub>
<b>Source:</b>	TLC Pharmaceutical Standards
<b>Source Lot No.:</b>	4049-084A6
<b>Storage Conditions:</b>	Store at 2-8 °C
<b>Solubility:</b>	Methanol, DMSO, DMF



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>99.1%</b>
<b>Impurity (HPLC)</b>	RT 13.86, 0.20%; RT 18.07, 0.46%	
<b>Water Content (KF)</b>	N/A	<b>0.2%</b>
<b>Residual Solvents (NMR)</b>	No residual solvent	
<b>Assay (%)</b>	Not less than 90.0%	<b>98.9%</b>
<b>Recommendation:</b>	<b>Release.</b>	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		04/08/2026
Approved by:	Quality Assurance		04/08/2026

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