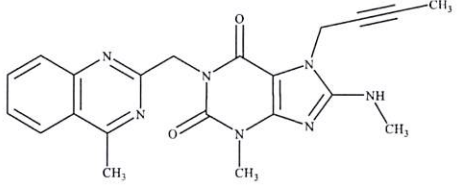


Certificate of Analysis

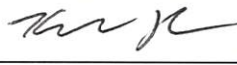

Certificate No.: **20260409510**

Date: April 9, 2026

Retest date: April 7, 2029

Compound Name: Linagliptin Impurity 33		
Synonyms:	7-(but-2-yn-1-yl)-3-methyl-8-(methylamino)-1-((4-methylquinazolin-2-yl)methyl)-3,7-dihydro-1H-purine-2,6-dione	
TLC Catalogue Number:	L-4454	
CAS Number:	2468656-63-3	
Alternate CAS Number:	N/A	
Molecular Weight:	403.45	
Molecular Formula:	C ₂₁ H ₂₁ N ₇ O ₂	
Source:	TLC Pharmaceutical Standards	
Source Lot No.:	3456-014A3	
Storage Conditions:	Store at 2-8 °C	
Solubility:	DMF (heated), DMSO (heated), Acidic solution	

Test Description	Specifications	Results
Visual Description	Pale yellow solid	Conforms
Identification		
IR	Conforms to structure	Conforms
MS	Conforms to structure	Conforms
¹ H NMR	Conforms to structure	Conforms
Purity (HPLC)	Not less than 95.0%	99.5%
Impurity (HPLC)	RT 7.86, 0.11%; RT 19.46, 0.15%; RT 20.28, 0.12%	
Water Content (KF)	N/A	0.1%
Residual Solvents (NMR)	0.1% methanol and 0.6% dimethylformamide	
Assay (%)	Not less than 90.0%	98.7%
Recommendation:	Release.	

Name	Department	Signature	Date
Reviewed and approved by:	Quality Control		04/09/2026
Approved by:	Quality Assurance		04/09/2026

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