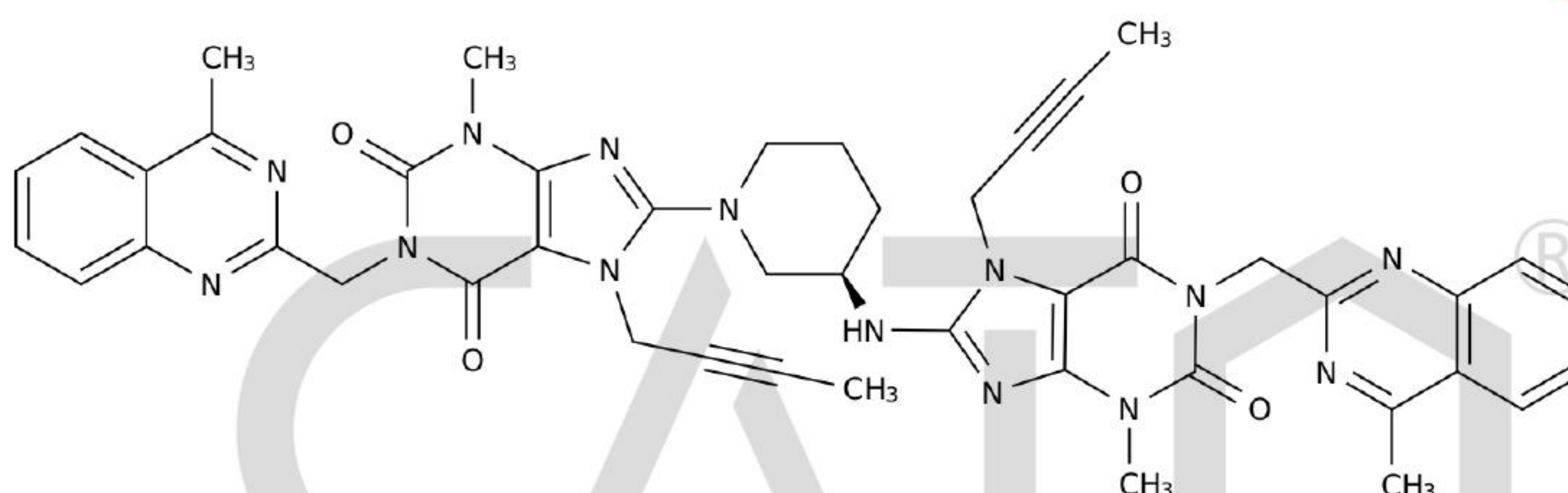


Certificate of Analysis

Reference Material & Standard

Product Name:	Linagliptin Impurity 70	Catalogue Number:	C4X-110170
Synonyms:	7-(But-2-yn-1-yl)-8-[(3R)-3-({7-(but-2-yn-1-yl)-3-methyl-1-[(4-methylquinazolin-2-yl)methyl]-2,6-dioxo-2,3,6,7-tetrahydro-1H-purin-8-yl}amino)-1-piperidinyl]-3-methyl-1-[(4-methylquinazolin-2-yl)methyl]-3,7-dihydro-1H-purine-2,6-dione	Lot Number:	0611-RH-0122
CAS Number:	2253964-98-4	Expiry Date:	Jun 24, 2030
Molecular Formula:	C ₄₅ H ₄₄ N ₁₄ O ₄	Storage:	2°C ~ 8°C Sealed
Molecular Weight:	844.92	Shipping Condition:	Shipping at Room Temperature
Solubility:	Soluble in Acetonitrile and DMSO	Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Yellow Solid
Identification	LCMS&IR&CNMR&HNMR	Confirmed
Purity	HPLC	97.857%
Residue on Ignition	TGA	0.4722%
Loss on Drying	TGA	1.8597%
Assay	qNMR	95.0%
Assay	Mass Balance	95.6%

Comment:

1. The retest date of this product is Jun 24, 2029.
2. The calculation of the mass balance method follows the formula (calculated on the non-dried basis):

$$\text{Assay (\%)} = (100\% - \text{Residue on Ignition} - \text{Loss on Drying}) * \text{Purity HPLC (\%)} / 100\%$$
Residue on Ignition and Loss on Drying are considered as absolute effect, HPLC purity is considered as relative effect.

Signature:

Prepared by:

Koi

Reviewed by:

Alice

Approved by General Manager:

David

Date: Jun 25, 2026

Date: Jun 25, 2026

Date: Jun 25, 2026



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