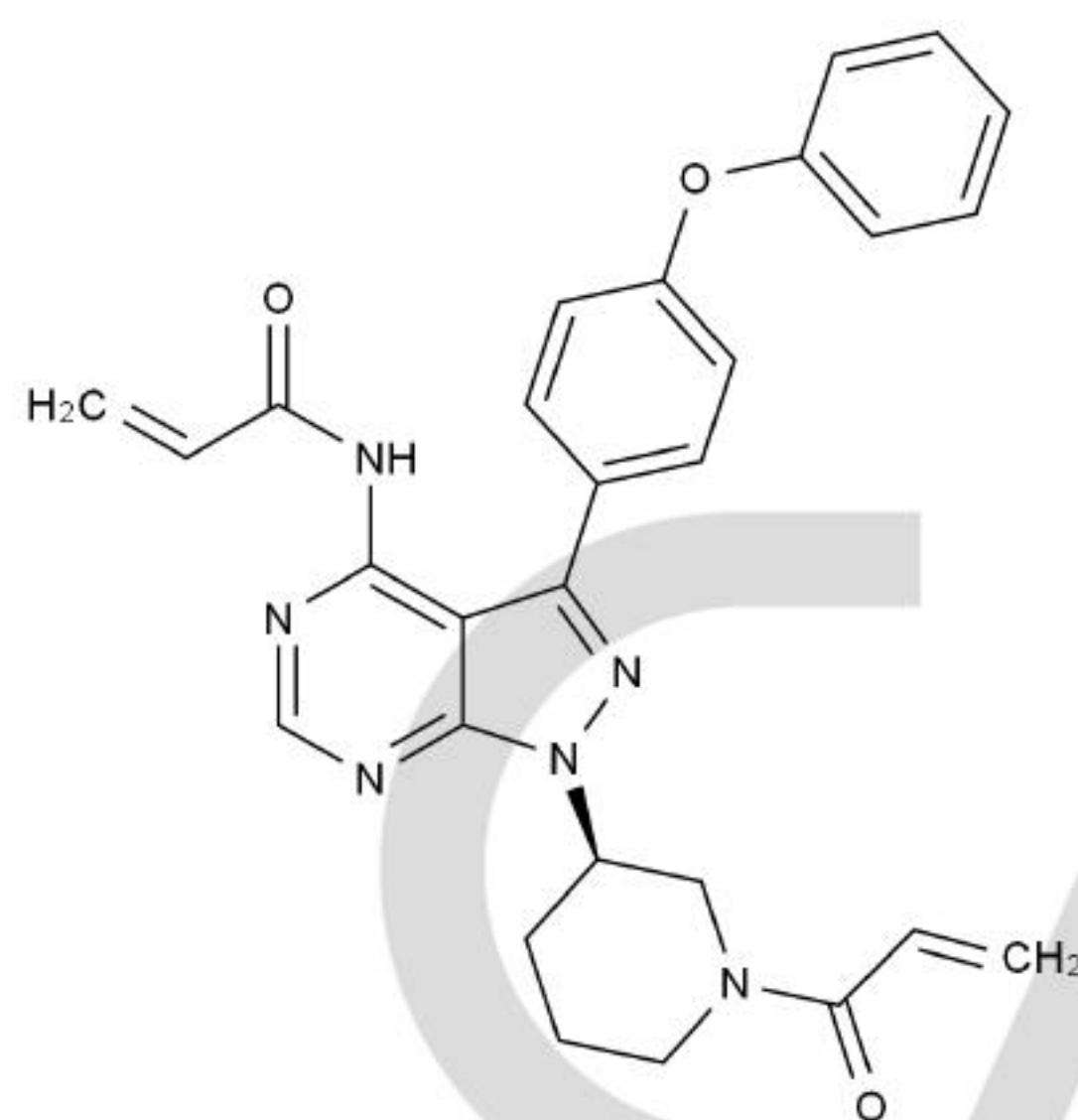


Certificate of Analysis

Reference Material & Standard

Product Name:	Ibrutinib Impurity 11	Catalogue Number:	C4X-106411
Synonyms:	N-{1-[(3R)-1-Acryloyl-3-piperidinyl]-3-(4-phenoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-4-yl}acrylamide	Lot Number:	0804-RH-0064
CAS Number:	2031255-27-1	Expiry Date:	Aug 11, 2030
Molecular Formula:	C ₂₈ H ₂₆ N ₆ O ₃	Storage:	-20°C±5°C sealed
Molecular Weight:	494.54	Shipping Condition:	Shipping with Ice Packs
Solubility:	Soluble in Acetonitrile and DMSO	Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Off-White Solid
Identification	LCMS&IR&CNMR&HNMR	Confirmed
Purity	HPLC	97.540%
Residue on Ignition	TGA	0.3302%
Loss on Drying	TGA	3.9164%
Assay	qNMR	93.5%
Assay	Mass Balance	93.4%

Comment:

- The retest date of this product is Aug 11, 2029.
- 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: Aug 12, 2026

Date: Aug 12, 2026

Date: Aug 12, 2026



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