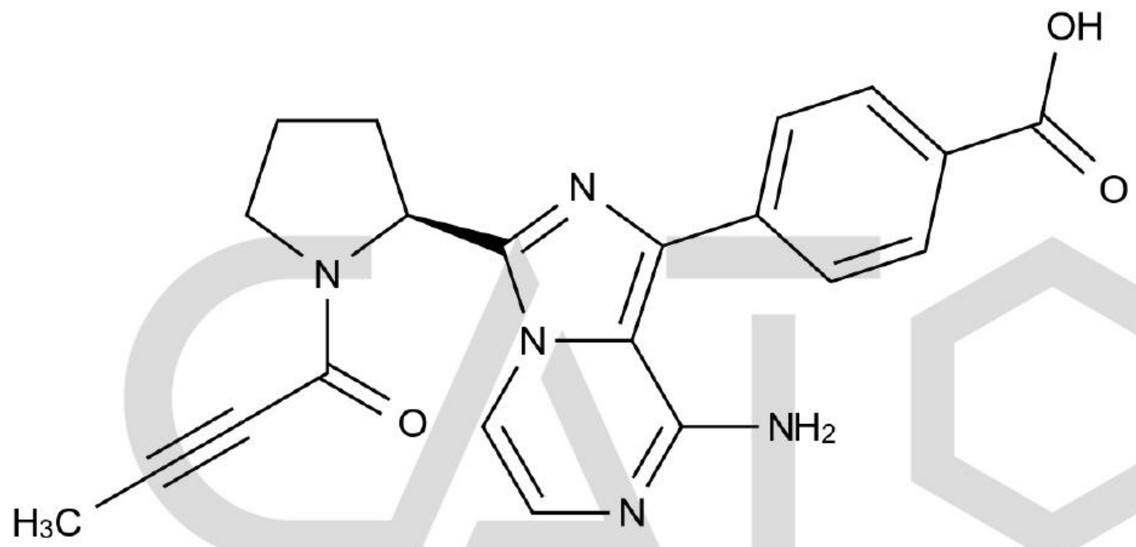
Certificate of Analysis

Reference Material & Standard

Product Name:	Acalabrutinib Impurity 20	**Catalogue Number:**	C4X-305520
Synonyms:	N/A	**Lot Number:**	1106-RH-0104
CAS Number:	N/A	**Expiry Date:**	Sep 29, 2030
Molecular Formula:	$C_{21}H_{19}N_5O_3$	**Storage:**	2°C ~ 8°C Protected from light and Sealed
Molecular Weight:	389.41	**Shipping Condition:**	Shipping at Room Temperature
		Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Off-White Solid
Identification	LCMS&UV&HNMR	Confirmed
Purity	HPLC	95.938%
Water Content	Karl Fischer	3.51%
Residual Solvents	NMR	Not detected in NMR
Assay	Mass Balance	92.6%

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Comment:

The calculation of the mass balance method follows the formula (calculated on the non-dried basis):
*Assay (%) = (100%-Water Content-Residual Solvents) * Purity HPLC (%) /100%*
Water Content and Residual Solvents are considered as absolute effect, HPLC purity is considered as relative effect.

Signature:

Prepared by: Date: Nov 10, 2026

Reviewed by: Date: Nov 11, 2026

Approved by General Manager: Date: Nov 11, 2026

CATO Research Chemicals Inc.