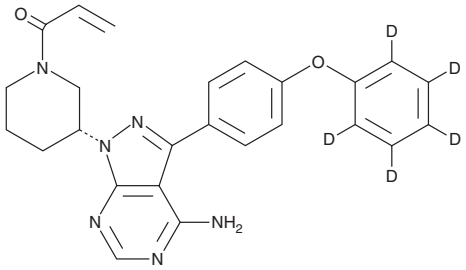
PRODUCT INFORMATION

Ibrutinib-d_5

Item No. 22561

CAS Registry No.:	1553977-17-5
Formal Name:	1-[(3R)-3-[4-amino-3-[4-(phenoxy-2,3,4,5,6-d_5)phenyl]-1H-pyrazolo[3,4-d]pyrimidin-1-yl]-1-piperidinyl]-2-propen-1-one
MF:	$C_{25}H_{19}D_5N_6O_2$
FW:	445.5
Chemical Purity:	≥98% (Ibrutinib)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ibrutinib-d_5 is intended for use as an internal standard for the quantification of ibrutinib (Item No. 16274) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Ibrutinib-d_5 is supplied as a solid. A stock solution may be made by dissolving the ibrutinib in the solvent of choice, which should be purged with an inert gas. Ibrutinib is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ibrutinib in ethanol is approximately 0.25 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Description

Ibrutinib is an irreversible inhibitor of Bruton's tyrosine kinase (BTK; IC_{50} = 0.5 nM) that selectively blocks B cell activation, promoting apoptosis and preventing homing to the protective tumor microenvironment, at concentrations that do not affect T cell receptor signaling (1,000-fold more potent).[1,2] It has been reported to inhibit autophosphorylation of BTK (IC_{50} = 11 nM), phosphorylation of PLCγ (IC_{50} = 29 nM), a substrate of BTK, and phosphorylation of ERK (IC_{50} = 13 nM), a further downstream kinase.[1] Formulations containing it have been examined clinically for the treatment of diseases associated with B cell antigen receptor signaling, including mantle cell lymphoma, chronic lymphocytic leukemia, and non-Hodgkin lymphoma.[1,3,4]

References

1. Honigberg, L. A., Smith, A.M., Sirisawad, M., *et al. Proc. Natl. Acad. Sci. USA* **107(29)**, 13075-13080 (2010).
2. Herman, S.E.M., Gordon, A.L., Hertlein, E., *et al. Blood* **117(23)**, 6287-6296 (2011).
3. Leslie, L. A. and Younes, A. *Leuk. Lymphoma.* **54(11)**, 2365-2376 (2013).
4. Wu, M., Akinleye, A., and Zhu, X. *J. Hematol. Oncol.* **6**, 36 (2013).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM