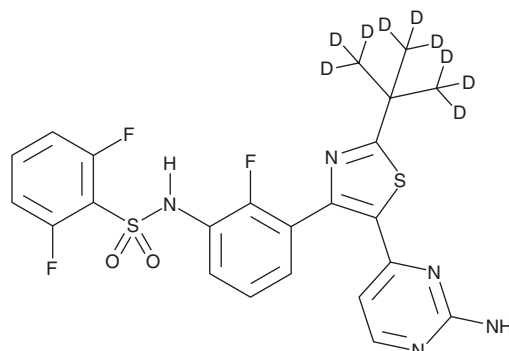


PRODUCT INFORMATION



Dabrafenib-d₉ Item No. 28797

CAS Registry No.: 1423119-98-5
Formal Name: N-[3-[5-(2-amino-4-pyrimidinyl)-2-[1,1-di(methyl-d₃)ethyl-2,2,2-d₃]-4-thiazolyl]-2-fluorophenyl]-2,6-difluorobenzenesulfonamide
MF: C₂₃H₁₁D₉F₃N₅O₂S₂
FW: 528.6
Chemical Purity: ≥98% (Dabrafenib)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₉); ≤1% d₀
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

Dabrafenib-d₉ is intended for use as an internal standard for the quantification of dabrafenib (Item No. 16989) 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).

Dabrafenib-d₉ is supplied as a solid. A stock solution may be made by dissolving the dabrafenib-d₉ in the solvent of choice, which should be purged with an inert gas. Dabrafenib-d₉ is soluble in organic solvents such as methanol and DMSO.

Description

Dabrafenib is an ATP-competitive inhibitor of Raf kinases (IC₅₀s = 0.64, 0.68 and 5 nM for wild-type B-RAF kinase, mutant B-RAF^{V600E}, and wild-type C-RAF kinase, respectively).¹ It also inhibits the tyrosine kinase-like kinases ALK5 and LIMK1 (IC₅₀s = 11 and 15 nM, respectively) and the calcium/calmodulin-dependent protein kinases SIK2 and PDK2 (IC₅₀s = 27 and 57 nM, respectively), as well as NEK11, CK1, and BRK (IC₅₀s = 20, 41, and 79 nM, respectively) in a panel of 270 kinases at 300 nM. Dabrafenib inhibits the growth of 16 cancer cell lines expressing mutant B-RAF^{V600E} (GI₅₀s = <200 nM), five cell lines expressing other B-RAF mutants (GI₅₀s = <30 nM), and 19 cell lines expressing wild-type Ras and Raf (GI₅₀s = <7,000 nM). However, it does not inhibit the growth of four cancer cell lines expressing mutant B-RAF^{V600E}, 133 cell lines expressing wild-type Ras and Raf, or 18 cell lines expressing mutant Ras (GI₅₀s = >10 μM) in a panel of 195 cancer cell lines. Dabrafenib (8 nM) inhibits MAPK signaling, inhibiting phosphorylation of MEK and ERK, and activates caspase-3/7 in B-RAF^{V600E}-expressing A375P melanoma cells but not in wild-type B-RAF-expressing human foreskin fibroblasts (EC₂₀₀s = 71 and >10,000 nM, respectively). It reduces tumor growth in an A375P mouse xenograft model when administered at doses ranging from 3 to 100 mg/kg. Formulations containing dabrafenib have been used in the treatment of B-RAF^{V600E}-expressing cancers.

Reference

1. King, A.J., Arnone, M.R., Bleam, M.R., *et al.* Dabrafenib; Preclinical characterization, increased efficacy when combined with trametinib, while BRAF/MEK tool combination reduced skin lesions. *PLoS One* **8**(7), e67583 (2013).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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