

Encorafenib

Chemical Properties

CAS No. : 1269440-17-6

Formula: C₂₂H₂₇ClFN₇O₄S

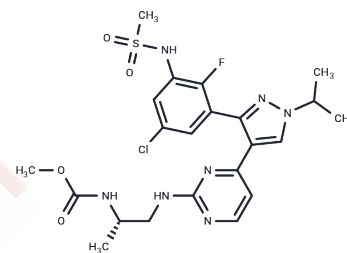
Molecular Weight: 540.01

Storage:

Keep away from direct sunlight, Keep away from moisture, Store at low temperature

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Encorafenib (LGX818) is an oral, highly selective inhibitor of the BRAF V600E mutation with an IC ₅₀ of 0.3 nM, exhibiting antitumor activity. Encorafenib can be used for studying tumor signaling pathway regulation and mechanisms of drug resistance.
Targets(IC ₅₀)	Raf
In vitro	<p>Methods: Encorafenib (0.5 μM) + Cetuximab (0.25 μM) and DAG (10 μM) were added to sensitive RKO and HT29 cells and incubated for 48 hours; cell viability was assessed using the CCK-8 assay, and apoptosis was detected by flow cytometry.</p> <p>Results: Co-administration of DAG significantly reduced the cell growth inhibition and apoptosis induced by Encorafenib/Cetuximab. [1]</p> <p>Methods: NRAS-mutant melanoma cell lines SKMel147, PDX129, and PDX62.1 were treated with Encorafenib (1 μM) and Binimetinib (1 μM) for 72 hours. Cell cycle analysis was performed via flow cytometry (PI staining), and the SubG1 apoptosis peak was quantified.</p> <p>Results: Encorafenib monotherapy induced significant apoptosis. [2]</p> <p>Methods: Neonatal rat ventricular myocytes (NRVMs) were treated with Encorafenib (0.1 μM) for 24 hours, and cell size was assessed by immunofluorescence staining.</p> <p>Results: Encorafenib treatment significantly increased the surface area of cardiomyocytes, indicating that it promotes cardiomyocyte hypertrophy.[3]</p>
In vivo	<p>Methods: Xenograft models (tumor-bearing nude mice) derived from BRAFV600E-mutant mCRC patients received oral Encorafenib (20 mg/kg, once daily) and intraperitoneal injections of Cetuximab (20 mg/kg, twice weekly) and PF-06471553 (MOGAT3 inhibitor) for 4 weeks.</p> <p>Results: The triple therapy (Encorafenib + Cetuximab + Pf) significantly inhibited resistant tumor growth, reduced DAG levels, and increased apoptosis. [1]</p> <p>Methods: NSG mice were subcutaneously implanted with three NRAS-mutant melanoma cell lines: SKMel147, PDX129, and PDX62.1. Treatment with oral Encorafenib (6 mg/kg, once daily) and Binimetinib (8 mg/kg, twice daily) was administered for up to 28 days.</p> <p>Results: Encorafenib significantly inhibited tumor growth.[2]</p>
Kinase Assay	The Raf kinase activity reaction is started by the addition of 10 μL per well of 2×ATP diluted in assay buffer. After 3 hours (bRaf(V600E)) or 1 hour (c-Raf), the reactions are stopped with the addition of 10 μL of stop reagent (60 mM EDTA). Phosphorylated

Kinase Assay	product is measured using a rabbit anti-p-MEK antibody and the Alpha Screen IgG (ProteinA) detection Kit, by the addition of 30 μ L to the well of a mixture of the antibody (1:2000 dilution) and detection beads (1:2000 dilution of both beads) in bead buffer (50 mM Tris, pH 7.5, 0.01% Tween20). The additions are carried out under dark conditions to protect the detection beads from light. A lid is placed on top of the plate and incubated for 1 hour at room temperature, then the luminescence is read on a PerkinElmer Envision instrument. The concentration of each compound for 50% inhibition (IC50) is calculated by non-linear regression using XL Fit data analysis software
Cell Research	LGX818 is dissolved in DMSO. A375 is a melanoma cell line that harbors the B-Raf V600E mutation. A375-luc cells engineered to express luciferase is plated to 384-well white clear bottom plates as 1,500 cells/50 μ L/well in DMEM containing 10% FBS. Test compounds, dissolved in 100% DMSO at appropriate concentrations, are transferred to the cells by a robotic Pin Tool (100 μ L). The cells are incubated for 2 days at 25°C, then 25 μ L of BrightGlo™ is added to each well and the plates are read by luminescence. The concentration of each compound for 50% inhibition (IC50) is calculated by non-linear regression using XL Fit data analysis software. wild type and V600E B-Raf.

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 93 mg/mL (172.22 mM),Sonication is recommended. DMSO: 257 mg/mL (475.92 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 9.3 mg/mL (17.22 mM),Suspension. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8518 mL	9.2591 mL	18.5182 mL
5 mM	0.3704 mL	1.8518 mL	3.7036 mL
10 mM	0.1852 mL	0.9259 mL	1.8518 mL
50 mM	0.037 mL	0.1852 mL	0.3704 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Wang J, et al. MOGAT3-mediated DAG accumulation drives acquired resistance to anti-BRAF/anti-EGFR therapy in BRAFV600E-mutant metastatic colorectal cancer. *J Clin Invest*. 2024 Oct 22;134(24):e182217.

Li B, Ming H, Qin S, et al. HSPA8 Activates Wnt/ β -Catenin Signaling to Facilitate BRAF V600E Colorectal Cancer Progression by CMA-Mediated CAV1 Degradation. *Advanced Science*. 2023: 2306535.

Niessner H, et al. Exploring the In Vitro and In Vivo Therapeutic Potential of BRAF and MEK Inhibitor Combination in NRAS-Mutated Melanoma. *Cancers (Basel)*. 2023 Nov 22;15(23):5521.

Clerk A, et al. Cardiomyocyte BRAF and type 1 RAF inhibitors promote cardiomyocyte and cardiac hypertrophy in mice in vivo. *Biochem J*. 2022 Feb 11;479(3):401-424.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel: 781-999-4286 E_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481