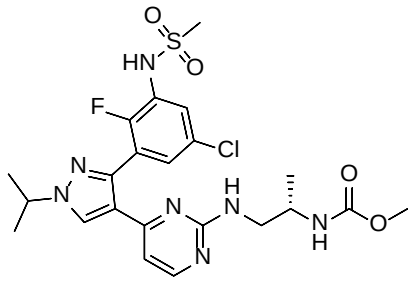
Product data sheet

MedKoo Cat#: 205852 Name: Encorafenib CAS#: 1269440-17-6 Chemical Formula: $C_{22}H_{27}ClFN_7O_4S$ Exact Mass: 539.1518 Molecular Weight: 540.01	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Encorafenib, also known as LGX-818, is an orally available Raf kinase inhibitor with potential antineoplastic activity. LGX818 specifically inhibits Raf kinase, a serine/threonine enzyme in the RAF/mitogen-activated protein kinase kinase (MEK)/extracellular signal-related kinase (ERK) signaling pathway. By inhibiting the activation of the RAF/MEK/ERK signaling pathway, the administration of LGX818 may result in a decrease in proliferation of tumor cells.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	100.0	185.18
Ethanol	100.0	185.18

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.85 mL	9.26 mL	18.52 mL
5 mM	0.37 mL	1.85 mL	3.70 mL
10 mM	0.19 mL	0.93 mL	1.85 mL
50 mM	0.04 mL	0.19 mL	0.37 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Li J, Li X. Encorafenib inhibits migration, induces cell cycle arrest and apoptosis in colorectal cancer cells. Mol Cell Biochem. 2019 Sep;459(1-2):113-120. doi: 10.1007/s11010-019-03554-3. Epub 2019 May 21. PMID: 31114933.

In vivo study

1. Kazmierczak PM, Burton NC, Keinrath G, Hirner-Eppeneder H, Schneider MJ, Eschbach RS, Heimer M, Solyanik O, Todica A, Reiser MF, Ricke J, Cyran CC. Integrin-targeted quantitative optoacoustic imaging with MRI correlation for monitoring a BRAF/MEK inhibitor combination therapy in a murine model of human melanoma. PLoS One. 2018 Oct 3;13(10):e0204930. doi: 10.1371/journal.pone.0204930. PMID: 30281669; PMCID: PMC6169922.

7. Bioactivity
Biological target: Encorafenib (LGX818) is a BRAF inhibitor with selective anti-proliferative and apoptotic activity in cells expressing BRAFV600E (EC50=4 nM).

In vitro activity

Product data sheet

The suppression of growth of colorectal cancer (CRC) cells by encorafenib was investigated. The effects of treatment of encorafenib on pathways linked to cancer were studied, and the effective inhibition of cell proliferation was documented. Cell migration was inhibited by encorafenib through a likely involvement of MPP and TIMP modulation. Furthermore, encorafenib treatment also induced cell cycle arrest. In addition, induction of apoptosis in CRC cells by elevating levels of PUMA. These observations indicate the potential therapeutic efficacy of encorafenib on CRC.

Reference: Mol Cell Biochem. 2019 Sep;459(1-2):113-120. https://link.springer.com/article/10.1007%2Fs11010-019-03554-3

In vivo activity

To investigate αvβ3-integrin-targeted optoacoustic imaging and MRI for monitoring a BRAF/MEK inhibitor combination therapy in a murine model of human melanoma, human BRAF V600E-positive melanoma xenograft (A375)-bearing Balb/c nude mice (n = 10) were imaged before (day 0) and after (day 7) a BRAF/MEK inhibitor combination therapy (encorafenib, 1.3 mg/kg/d; binimetinib, 0.6 mg/kg/d, n = 5) or placebo (n = 5), respectively. Optoacoustic imaging was performed on a preclinical system unenhanced and 5 h after i. v. injection of an αvβ3-integrin-targeted fluorescent probe. The αvβ3-integrin-specific tumor signal was significantly reduced under therapy, showing a unidirectional decline in all animals (from 7.98±2.22 to 1.67±1.30; p = 0.043). No significant signal change was observed in the control group (from 6.60±6.51 to 3.67±1.93; p = 0.500). Immunohistochemistry revealed a significantly lower integrin expression (ß3: 0.20±0.02 vs. 0.39±0.05; p = 0.008) and microvascular density (CD31: 119±15 vs. 292±49; p = 0.008) in the therapy group.

Reference: PLoS One. 2018 Oct 3;13(10):e0204930. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6169922/