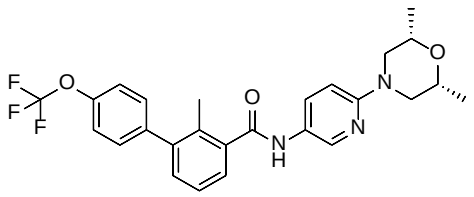
Product data sheet

MedKoo Cat#: 205510 Name: Sonidegib (LDE-225) CAS#: 956697-53-3 (free base) Chemical Formula: $C_{26}H_{26}F_3N_3O_3$ Exact Mass: 485.1926 Molecular Weight: 485.50	
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:
Sonidegib, also known as, erismodegib, LDE225, NVP-LDE225, is an orally bioavailable small-molecule Smoothened (Smo) antagonist with potential antineoplastic activity. Erismodegib selectively binds to the Hedgehog (Hh)-ligand cell surface receptor Smo, which may result in the suppression of the Hh signaling pathway and, so, the inhibition of tumor cells in which this pathway is abnormally activated. It was approved by the FDA for treating basal cell carcinoma in July 2015.

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	73.50	151.39
Ethanol	48.0	98.87

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.06 mL	10.30 mL	20.60 mL
5 mM	0.41 mL	2.06 mL	4.12 mL
10 mM	0.21 mL	1.03 mL	2.06 mL
50 mM	0.04 mL	0.21 mL	0.41 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. Jalili A, Mertz KD, Romanov J, Wagner C, Kalthoff F, Stuetz A, Pathria G, Gschaider M, Stingl G, Wagner SN. NVP-LDE225, a potent and selective SMOOTHENED antagonist reduces melanoma growth in vitro and in vivo. PLoS One. 2013 Jul 30;8(7):e69064. doi: 10.1371/journal.pone.0069064. Erratum in: PLoS One. 2013;8(9). doi:10.1371/annotation/ddd22094-5d8d-43ef-ad81-b95afe392ec7. PMID: 23935925; PMCID: PMC3728309.

In vivo study

1. Jalili A, Mertz KD, Romanov J, Wagner C, Kalthoff F, Stuetz A, Pathria G, Gschaider M, Stingl G, Wagner SN. NVP-LDE225, a potent and selective SMOOTHENED antagonist reduces melanoma growth in vitro and in vivo. PLoS One. 2013 Jul 30;8(7):e69064. doi: 10.1371/journal.pone.0069064. Erratum in: PLoS One. 2013;8(9). doi:10.1371/annotation/ddd22094-5d8d-43ef-ad81-b95afe392ec7. PMID: 23935925; PMCID: PMC3728309.

7. Bioactivity
Biological target: Sonidegib (Erismodegib) is a Smo antagonist with IC50 of 1.3 nM (mouse) and 2.5 nM (human) in cell-free assays.

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In vitro activity

Human melanoma cell lines were treated with different concentrations of NVP-LDE225 or the vehicle (DMSO). Viability of cells was assessed by MTT assay. There was a significant reduction of cell viability after treatment of cells with NVP-LDE225 which was dose and time dependent. Decreased viability of human melanoma cell lines (LOX-IMVI, UACC-257 and MEL-FH) after NVP-LDE225 treatment was accompanied by changes in cell morphology including appearance of blebs and cell disintegration into apoptotic bodies (data not shown). This could be confirmed by annexin V staining where there was a significant induction of annexin V positive/propidium iodide negative apoptotic cells after NVP-LDE225, as compared to vehicle (DMSO) treatment (Fig. 5 and Figure S2).

Reference: PLoS One. 2013 Jul 30;8(7):e69064. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3728309/

In vivo activity

Whether intratumorally administered NVP-LDE225 is able to inhibit the growth of human melanoma cells was investigated in athymic Nude-Foxn1 nu/nu mice. 1×106 LOX IMVI human melanoma cells suspended in PBS containing 10% FCS were injected s.c into both flanks. As tumors reached the mean volume of 48 mm3, NVP-LDE225 was injected on daily basis at doses of 2, 20 or 200 µg/shot. NVP-LDE225 induced a significant antitumor response ($p<0.05$). Doses of NVP-LDE225 less than 2 µg, 0.2 and 0.02 µg showed non-significant or no antitumor response, respectively (Fig. 6 C). Immunofluorescent microscopy staining for GLI1 expression showed decreased expression upon NVP-LDE225 treatment (Fig. 7).

Reference: PLoS One. 2013 Jul 30;8(7):e69064. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3728309/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.