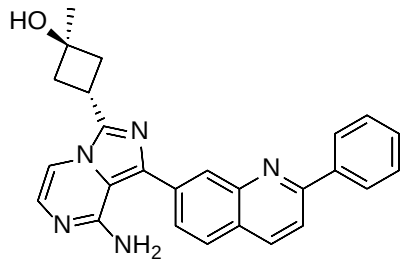
Product data sheet

MedKoo Cat#: 202096 Name: Linsitinib CAS: 867160-71-2 Chemical Formula: $C_{26}H_{23}N_5O$ Exact Mass: 421.1903 Molecular Weight: 421.504	
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:
Linsitinib, also known as OSI-906, is an orally bioavailable small molecule inhibitor of the insulin-like growth factor 1 receptor (IGF-1R) with potential antineoplastic activity. OSI-906 selectively inhibits IGF-1R, which may result in the inhibition of tumor cell proliferation and the induction of tumor cell apoptosis. Overexpressed in a variety of human cancers, IGFR-1 stimulates cell proliferation, enables oncogenic transformation, and suppresses apoptosis.

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
DMF	25.0	59.31
DMF:PBS (pH 7.2) (1:30)	0.03	0.07
DMSO	49.04	116.34
Ethanol	1.0	2.37

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.37 mL	11.86 mL	23.73 mL
5 mM	0.47 mL	2.37 mL	4.75 mL
10 mM	0.24 mL	1.19 mL	2.37 mL
50 mM	0.05 mL	0.24 mL	0.47 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. Liu L, Liang C, Zhuo C, Jiang H, Ye H, Ruan T, Song J, Jiang S, Zhang Y, Li X. OSI-906 restores the sensitivity of ovarian clear cell carcinoma to cisplatin by targeting the IGF1R/AKT pathway. Med Oncol. 2022 Jan 4;39(2):26. doi: 10.1007/s12032-021-01592-w. PMID: 34982265.
2. Mulvihill MJ, Cooke A, Rosenfeld-Franklin M, Buck E, Foreman K, Landfair D, O'Connor M, Pirritt C, Sun Y, Yao Y, Arnold LD, Gibson NW, Ji QS. Discovery of OSI-906: a selective and orally efficacious dual inhibitor of the IGF-1 receptor and insulin receptor. Future Med Chem. 2009 Sep;1(6):1153-71. doi: 10.4155/fmc.09.89. PMID: 21425998.

In vivo study

1. Chai Y, Jia X, Zhu J, Jiang C, Yin N, Li F. Increased Fat Graft Survival By Promoting Adipocyte Dedifferentiation. Aesthet Surg J. 2022 Nov 23:sjac296. doi: 10.1093/asj/sjac296. Epub ahead of print. PMID: 36415951.

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2. McKinley ET, Bugaj JE, Zhao P, Guleryuz S, Mantis C, Gokhale PC, Wild R, Manning HC. 18FDG-PET predicts pharmacodynamic response to OSI-906, a dual IGF-1R/IR inhibitor, in preclinical mouse models of lung cancer. Clin Cancer Res. 2011 May 15;17(10):3332-40. doi: 10.1158/1078-0432.CCR-10-2274. Epub 2011 Jan 21. PMID: 21257723; PMCID: PMC3122480.

7. Bioactivity

Biological target:

Linsitinib is a dual inhibitor of the IGF-1 receptor and insulin receptor (IR) with IC_{50}s of 35 and 75 nM, respectively.

In vitro activity

In cell-based phenotypic assays, OSI-906 inhibited IGF-1- or IGF-2-mediated proliferation (and induced apoptosis, data not shown) in cell lines representing a variety of tumor types. A variety of cell lines were highly sensitive to OSI-906, with EC_{50} values ranging from 0.021 to 0.810 μM (Table 10).

Reference: Future Med Chem. 2009 Sep;1(6):1153-71. https://pubmed.ncbi.nlm.nih.gov/21425998/

In vivo activity

Similarly, in vivo PD effects were evaluated in human tumor cell line xenografts propagated in athymic nude mice by (18)FDG-PET at 2, 4, and 24 hours following a single treatment of OSI-906 for the correlation of inhibition of receptor targets and downstream markers. Daily treatment with 60 mg/kg OSI-906 over 10 days resulted in tumor growth inhibition in the NCI-H292 xenografts compared to controls (Fig. 1A), but no growth changes were observed in the non-responsive NCI-H441 xenografts (Fig. 1B).

Reference: Clin Cancer Res. 2011 May 15;17(10):3332-40. https://pubmed.ncbi.nlm.nih.gov/21257723/