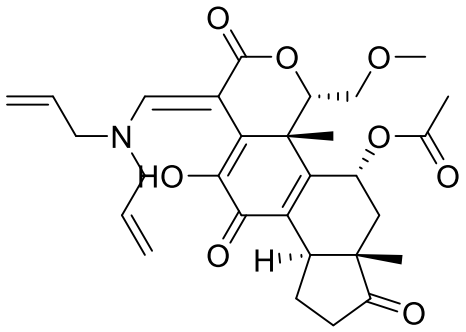
Product data sheet

MedKoo Cat#: 202360 Name: Sonolisib (PX-866) CAS#: 502632-66-8 Chemical Formula: $C_{29}H_{35}NO_8$ Exact Mass: 525.2363 Molecular Weight: 525.59	
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:

Sonolisib, also known as PX-866, is a small-molecule wortmannin analogue inhibitor of the alpha, gamma, and delta isoforms of phosphoinositide 3-kinase (PI3K) with potential antineoplastic activity. PI3K inhibitor PX-866 inhibits the production of the secondary messenger phosphatidylinositol-3,4,5-trisphosphate (PIP3) and activation of the PI3K/Akt signaling pathway, which may result in inhibition of tumor cell growth and survival in susceptible tumor cell populations. Activation of the PI3K/Akt signaling pathway is frequently associated with tumorigenesis and dysregulated PI3K/Akt signaling may contribute to tumor resistance to a variety of antineoplastic agents.

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	47.57
DMSO	14	26.64
Ethanol	25	47.57

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.90 mL	9.51 mL	19.03 mL
5 mM	0.38 mL	1.90 mL	3.81 mL
10 mM	0.19 mL	0.95 mL	1.90 mL
50 mM	0.04 mL	0.19 mL	0.38 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. Dong YQ, Sun N, Yang XC, He MQ, Huang H, Guo WJ, Lin XJ. Suppression of Autophagy Can Augment PIK3 Inhibitor Induced Apoptosis in T Lymphoblastic Leukemia Cell Lines. Ann Clin Lab Sci. 2023 Jul;53(4):598-606. PMID: 37625845.
2. Aggarwal S, John S, Sapra L, Sharma SC, Das SN. Targeted disruption of PI3K/Akt/mTOR signaling pathway, via PI3K inhibitors, promotes growth inhibitory effects in oral cancer cells. Cancer Chemother Pharmacol. 2019 Mar;83(3):451-461. doi: 10.1007/s00280-018-3746-x. Epub 2018 Dec 5. PMID: 30519710.

In vivo study

1. Yam C, Xu X, Davies MA, Gimotty PA, Morrissette JJD, Tetzlaff MT, Wani KM, Liu S, Deng W, Buckley M, Zhao J, Amaravadi RK, Haas NB, Kudchadkar RR, Pavlick AC, Sosman JA, Tawbi H, Walker L, Schuchter LM, Karakousis GC, Gangadhar TC. A Multicenter Phase I Study Evaluating Dual PI3K and BRAF Inhibition with PX-866 and Vemurafenib in

Patients with Advanced BRAF V600-Mutant Solid Tumors. Clin Cancer Res. 2018 Jan 1;24(1):22-32. doi: 10.1158/1078-0432.CCR-17-1807. Epub 2017 Oct 19. PMID: 29051322; PMCID: PMC5754240.

2. Ihle NT, Paine-Murrieta G, Berggren MI, Baker A, Tate WR, Wipf P, Abraham RT, Kirkpatrick DL, Powis G. The phosphatidylinositol-3-kinase inhibitor PX-866 overcomes resistance to the epidermal growth factor receptor inhibitor gefitinib in A-549 human non-small cell lung cancer xenografts. Mol Cancer Ther. 2005 Sep;4(9):1349-57. doi: 10.1158/1535-7163.MCT-05-0149. PMID: 16170026; PMCID: PMC1432090.

7. Bioactivity

Biological target:

Sonolisib is an inhibitor of PI3K (IC50=0.1 nM (p110α), 1.0 nM (p120γ), 2.9 nM (p110δ)).

In vitro activity

PX-866 could enhance EGFR inhibitors' efficacy in non-small cell lung cancer (NSCLC) and potentially other cancers resistant to EGFR inhibition. PX-866 enhanced gefitinib's effectiveness against NSCLC xenografts. PX-866 inhibited phospho-Akt in tumors but did not affect glucose tolerance. Prolonged PX-866 administration also caused increased neutrophil counts.

Reference: Mol Cancer Ther. 2005 Sep;4(9):1349-57. https://pubmed.ncbi.nlm.nih.gov/16170026/

In vivo activity

Combining PX-866 or PI-103 with the autophagy inhibitor 3-methyladenine (3-MA) affects apoptosis in T lymphoblastic leukemia cells. PX-866 and PI-103 treatment reduced cell viability while increasing apoptosis in CCRF-CEM and Jurkat cells, which was further enhanced when combined with 3-MA. The phosphorylation levels of AKT and mTOR were suppressed by PX-866 or PI-10. The expression of LC3, ATG5, ATG12 and Beclin-1 was upregulated by PX-866 or PI-103 and downregulated by 3-MA.

Reference: Ann Clin Lab Sci. 2023 Jul;53(4):598-606. https://pubmed.ncbi.nlm.nih.gov/37625845/

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.