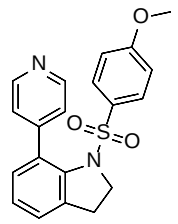
Product data sheet

MedKoo Cat#: 406293 Name: MPT0B098 CAS: 1254363-89-7 Chemical Formula: $C_{20}H_{18}N_2O_3S$ Exact Mass: 366.1038 Molecular Weight: 366.435	
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:

MPT0B098 is a potent microtubule inhibitor through binding to the colchicine-binding site of tubulin. MPT0B098 is active against the growth of various human cancer cells, including chemoresistant cells with IC50 values ranging from 70 to 150 nmol/L. MPT0B098 arrests cells in the G2Â–M phase and subsequently induces cell apoptosis. In addition, MPT0B098 effectively suppresses VEGF-induced cell migration and capillary-like tube formation of HUVECs. Distinguished from other microtubule inhibitors, MPT0B098 not only inhibited the expression levels of HIF-1α protein but also destabilized HIF-1α mRNA. The mechanism of causing unstable of HIF-1α mRNA by MPT0B098 is through decreasing RNA-binding protein, HuR, translocation from the nucleus to the cytoplasm. Notably, MPT0B098 effectively suppresses tumor growth and microvessel density of tumor specimens in vivo. Taken together, our results provide a novel mechanism of inhibiting HIF-1α of a microtubule inhibitor MPT0B098. MPT0B098 is a promising anticancer drug candidate with potential for the treatment of human malignancies. (source: Mol Cancer Ther; 2013, 12(7); 1202Â–12.

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
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.73 mL	13.64 mL	27.29 mL
5 mM	0.55 mL	2.73 mL	5.46 mL
10 mM	0.27 mL	1.36 mL	2.73 mL
50 mM	0.06 mL	0.27 mL	0.55 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. Tsai IT, Kuo CC, Liou JP, Chang JY. Novel microtubule inhibitor MPT0B098 inhibits hypoxia-induced epithelial-to-mesenchymal transition in head and neck squamous cell carcinoma. J Biomed Sci. 2018 Mar 28;25(1):28. doi: 10.1186/s12929-018-0432-6. PMID: 29592811; PMCID: PMC5875002.

2. Peng HY, Cheng YC, Hsu YM, Wu GH, Kuo CC, Liou JP, Chang JY, Jin SL, Shiah SG. MPT0B098, a Microtubule Inhibitor, Suppresses JAK2/STAT3 Signaling Pathway through Modulation of SOCS3 Stability in Oral Squamous Cell Carcinoma. PLoS One. 2016 Jul 1;11(7):e0158440. doi: 10.1371/journal.pone.0158440. PMID: 27367272; PMCID: PMC4930189.

In vivo study

1. Cheng YC, Liou JP, Kuo CC, Lai WY, Shih KH, Chang CY, Pan WY, Tseng JT, Chang JY. MPT0B098, a novel microtubule inhibitor that destabilizes the hypoxia-inducible factor-1α mRNA through decreasing nuclear-cytoplasmic translocation of RNA-

binding protein HuR. Mol Cancer Ther. 2013 Jul;12(7):1202-12. doi: 10.1158/1535-7163.MCT-12-0778. Epub 2013 Apr 25. Erratum in: Mol Cancer Ther. 2013 Sep;12(9):1919. PMID: 23619299.

7. Bioactivity

Biological target:

MPT0B098 is a potent microtubule inhibitor through binding to the colchicine-binding site of tubulin.

In vitro activity

MPT0B098 significantly inhibited HIF-1α expression, epithelial-to-mesenchymal morphology changes, and migratory ability in the human head and neck squamous cell carcinoma cell line OEC-M1. Furthermore, after MPT0B098 treatment, the expression of two mesenchymal markers, vimentin and N-cadherin, was downregulated under hypoxic conditions. MPT0B098 significantly inhibited transforming growth factor(TGF)-β-induced phosphorylation of receptor-associated Smad2/3 by downregulating TGF-β mRNA and protein expression.

Reference: J Biomed Sci. 2018 Mar 28;25(1):28. https://pubmed.ncbi.nlm.nih.gov/29592811/

In vivo activity

This study recently discovered a novel indoline-sulfonamide compound, 7-aryl-indoline-1-benzene-sulfonamide (MPT0B098), as a potent microtubule inhibitor through binding to the colchicine-binding site of tubulin. Notably, MPT0B098 effectively suppresses tumor growth and microvessel density of mouse tumor specimens in vivo.

Reference: Mol Cancer Ther. 2013 Jul;12(7):1202-12. https://pubmed.ncbi.nlm.nih.gov/23619299/

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.