

Product data sheet



MedKoo Cat#: 561321 Name: MSAB CAS#: 173436-66-3 Chemical Formula: C ₁₅ H ₁₅ NO ₄ S Exact Mass: 305.0722 Molecular Weight: 305.35		
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:

MSAB is a selective inhibitor of Wnt/β-catenin signaling. MSAB shows potent anti-tumor effects selectively on Wnt-dependent cancer cells in vitro and in mouse cancer models. MSAB binds to β-catenin, promoting its degradation, and specifically downregulates Wnt/β-catenin target genes.

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	25.0	81.9

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.27 mL	16.37 mL	32.75 mL
5 mM	0.65 mL	3.27 mL	6.55 mL
10 mM	0.33 mL	1.64 mL	3.27 mL
50 mM	0.07 mL	0.33 mL	0.65 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. Pandey S, Sahukhal GS, Elasri MO. The msaABCR Operon Regulates Persister Formation by Modulating Energy Metabolism in *Staphylococcus aureus*. *Front Microbiol.* 2021 Apr 14;12:657753. doi: 10.3389/fmicb.2021.657753. PMID: 33936014; PMCID: PMC8079656.
2. Pal A, Ashworth JC, Collier P, Probert C, Jones S, Leza EP, Meakin ML, A Ritchie A, Onion D, Clarke PA, Allegrucci C, Grabowska AM. A 3D Heterotypic Breast Cancer Model Demonstrates a Role for Mesenchymal Stem Cells in Driving a Proliferative and Invasive Phenotype. *Cancers (Basel).* 2020 Aug 14;12(8):2290. doi: 10.3390/cancers12082290. PMID: 32824003; PMCID: PMC7465555.

In vivo study

1. Raposo TP, Alfahed A, Nateri AS, Ilyas M. Tensin4 (TNS4) is upregulated by Wnt signalling in adenomas in multiple intestinal neoplasia (Min) mice. *Int J Exp Pathol.* 2020 Jun;101(3-4):80-86. doi: 10.1111/iep.12352. Epub 2020 Jun 22. PMID: 32567731; PMCID: PMC7370848.

7. Bioactivity

Biological target:

MSAB is an inhibitor of Wnt/β-catenin signaling.

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In vitro activity

Further, to examine MsaB regulation of *ccpE* and *gudB*, this study performed an EMSA, which showed MsaB binding to the *ccpE* promoter (Figure 5B) and thereby suggested that MsaB regulates the TCA cycle via *ccpE*. This also confirms previous finding of MsaB regulation of *ccpE* in the UAMS-1 strain. However, the absence of binding to the promoter of *gudB* suggests that its regulation by MsaB might be indirect (Figure 5C). All these observations lead this study to conclude that MsaB directly regulates *ccpE* to control TCA cycle activity and that the increased energy state in the Δ msaABCR led to decreased persister cell formation in late exponential growth phase.

Reference: Front Microbiol. 2021; 12: 657753. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8079656/>

In vivo activity

Catenin is the mediator of canonical Wnt signalling, and levels of active β -catenin can be reduced using the inhibitor MSAB. This is a cell-permeable compound that binds to β -catenin and induces its ubiquitination and proteasomal degradation. When HCT116 cells were treated with MSAB, there was a reduction in active β -catenin and TNS4 levels were also downregulated (Figure 4A).

Reference: Int J Exp Pathol. 2020 Jun;101(3-4):80-86. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7370848/>

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.