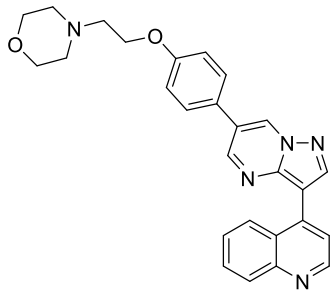
Product data sheet

MedKoo Cat#: 563126 Name: DMH2 CAS: 1206711-14-9 Chemical Formula: $C_{27}H_{25}N_5O_2$ Exact Mass: 451.2008 Molecular Weight: 451.53	
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:
DMH2 is a bone morphogenetic protein (BMP) type I receptor antagonist. It acts by decreasing growth and inducing cell death of lung cancer cell lines.

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	9.03	20.0

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.21 mL	11.07 mL	22.15 mL
5 mM	0.44 mL	2.21 mL	4.43 mL
10 mM	0.22 mL	1.11 mL	2.21 mL
50 mM	0.04 mL	0.22 mL	0.44 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. Langenfeld E, Deen M, Zachariah E, Langenfeld J. Small molecule antagonist of the bone morphogenetic protein type I receptors suppresses growth and expression of Id1 and Id3 in lung cancer cells expressing Oct4 or nestin. Mol Cancer. 2013 Oct 26;12(1):129. doi: 10.1186/1476-4598-12-129. PMID: 24160469; PMCID: PMC4176118.

In vivo study

1. Tsugawa D, Oya Y, Masuzaki R, Ray K, Engers DW, Dib M, Do N, Kuramitsu K, Ho K, Frist A, Yu PB, Bloch KD, Lindsley CW, Hopkins CR, Hong CC, Karp SJ. Specific activin receptor-like kinase 3 inhibitors enhance liver regeneration. J Pharmacol Exp Ther. 2014 Dec;351(3):549-58. doi: 10.1124/jpet.114.216903. Epub 2014 Sep 30. PMID: 25271257; PMCID: PMC4244585.

7. Bioactivity
Biological target:

DMH2 is a potent BMP receptor antagonist.

In vitro activity

Western blot analysis demonstrated that DMH2 caused a significant reduction in the expression of the BMP transcription factor pSmad 1/5 and its direct downstream targets Id1 and Id3 in Oct4/GFP, Nestin/GFP, and GFP (−) cells (Figure 6A). DMH2 caused significant growth inhibition of Oct4/GFP, Nestin/GFP, and GFP (−) cells (6B).

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Reference: Mol Cancer. 2013 Oct 26;12(1):129. https://pubmed.ncbi.nlm.nih.gov/24160469/

In vivo activity

This study next performed similar experiments using DMH2 (Fig. 3B). Mice receiving 0.5 mg/kg b.i.d. exhibited absolutely, but not significantly, higher hepatocyte proliferation at 48 hours compared with control animals. Mice receiving 1 mg/kg DMH2 demonstrated a trend toward increased hepatocyte proliferation, from 13.7 to 27.6% (P = 0.056). Mice receiving 2 mg/kg DMH2 demonstrated doubling of hepatocyte proliferation, 13.7 versus 26.9% (P = 0.027).

Reference: J Pharmacol Exp Ther. 2014 Dec;351(3):549-58. https://pubmed.ncbi.nlm.nih.gov/25271257/

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.