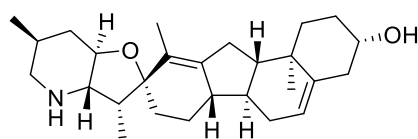


Product data sheet



MedKoo Cat#: 401235 Name: Cyclopamine CAS#: 4449-51-8 Chemical Formula: C ₂₇ H ₄₁ NO ₂ Exact Mass: 411.31373 Molecular Weight: 411.62		
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:

Cyclopamine, also known as 11-deoxojervine, is a naturally occurring chemical that belongs to the group of steroidal jerveratrum alkaloids. It is a teratogen isolated from the corn lily (*Veratrum californicum*) that causes usually fatal birth defects. It can prevent the fetal brain from dividing into two lobes (holoprosencephaly) and cause the development of a single eye (cyclopia). It does so by inhibiting the hedgehog signaling pathway (Hh). Cyclopamine is useful in studying the role of Hh in normal development, and as a potential treatment for certain cancers in which Hh is overexpressed. Cyclopamine was named for one-eyed lambs which were born to sheep which grazed on wild corn lily at a farm in Idaho.

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	10.0	24.29
DMF	2.0	4.86
Ethanol	17.43	42.34
Ethanol:PBS (pH 7.2) (1:3)	0.25	0.61

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.43 mL	12.15 mL	24.29 mL
5 mM	0.49 mL	2.43 mL	4.86 mL
10 mM	0.24 mL	1.21 mL	2.43 mL
50 mM	0.05 mL	0.24 mL	0.49 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. Yuan YF, Zhu WX, Liu T, He JQ, Zhou Q, Zhou X, Zhang X, Yang J. Cyclopamine functions as a suppressor of benign prostatic hyperplasia by inhibiting epithelial and stromal cell proliferation via suppression of the Hedgehog signaling pathway. *Int J Mol Med.* 2020 Jul;46(1):311-319. doi: 10.3892/ijmm.2020.4569. Epub 2020 Apr 8. PMID: 32319534; PMCID: PMC7255449.
2. Song X, Zhang B, Taorong W, Wang G, Huang Y, Zhang Y, Liu M, Chen X. Effects of Cyclopamine on the Viability of Articular Chondrocytes in Rats with Adjuvant Arthritis in vitro. *Ann Clin Lab Sci.* 2020 Jan;50(1):85-91. PMID: 32161016.

In vivo study

Product data sheet



1. Zhang B, Jiang T, Shen S, She X, Tuo Y, Hu Y, Pang Z, Jiang X. Cyclopamine disrupts tumor extracellular matrix and improves the distribution and efficacy of nanotherapeutics in pancreatic cancer. *Biomaterials*. 2016 Oct;103:12-21. doi: 10.1016/j.biomaterials.2016.06.048. Epub 2016 Jun 23. PMID: 27376555.
2. Li R, Cai L, Ding J, Hu CM, Wu TN, Hu XY. Inhibition of hedgehog signal pathway by cyclopamine attenuates inflammation and articular cartilage damage in rats with adjuvant-induced arthritis. *J Pharm Pharmacol*. 2015 Jul;67(7):963-71. doi: 10.1111/jphp.12379. Epub 2015 Feb 3. PMID: 25645065.

7. Bioactivity

Biological target:

Cyclopamine is a Hedgehog (Hh) pathway antagonist with an IC50 of 46 nM in the Hh cell assay.

In vitro activity

Finally, cyclopamine also significantly improved the tumor growth inhibition effect of i.v.-injected nanotherapeutics in pancreatic tumor xenograft mouse models.

Reference: *Biomaterials*. 2016 Oct;103:12-21. <https://pubmed.ncbi.nlm.nih.gov/27376555/>

In vivo activity

The number of apoptotic cells in the BPH and cyclopamine rat groups were significantly reduced compared with the control group ($P < 0.05$). Conversely, the number of apoptotic cells in the cyclopamine group was significantly increased ($P < 0.05$) than that of the BPH group. These results suggested that cyclopamine could induce the apoptosis of epithelial cells in BPH rats.

Reference: *Int J Mol Med*. 2020 Jul; 46(1): 311–319. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7255449/>

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.