Product data sheet



MedKoo Cat#: 510310				
Name: Kartogenin				
CAS: 4727-31-5				
Chemical Formula: C ₂₀ H ₁₅ NO ₃				
Exact Mass: 317.1052				
Molecular Weight: 317.344				
Product supplied as:	Powder			
Purity (by HPLC):	$\geq 98\%$			
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:

Kartogenin induces the selective differentiation of multipotent mesenchymal stem cells (MSCs) into chondrocytes. Kartogenin binds to filamin A, and disrupts the specific interaction between filamin A and CBF β (core-binding factor β subunit). Apparently, kartogenin induces chondrogenesis by regulating the nuclear localization of CBF β .

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	30.0	94.53		
DMSO	41.68	131.35		
DMSO:PBS (pH 7.2)	0.5	1.58		
(1:1)				
Ethanol	16.94	53.36		

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.15 mL	15.76 mL	31.51 mL
5 mM	0.63 mL	3.15 mL	6.30 mL
10 mM	0.32 mL	1.58 mL	3.15 mL
50 mM	0.06 mL	0.32 mL	0.63 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

 Yan H, Yu T, Li J, Zhang T, Li Q, Zhou Y, Liu D. Kartogenin Improves Osteogenesis of Bone Marrow Mesenchymal Stem Cells via Autophagy. Stem Cells Int. 2022 Dec 22;2022:1278921. doi: 10.1155/2022/1278921. PMID: 36591373; PMCID: PMC9800103.
Xie A, Xue J, Wang Y, Yang C, Xu M, Jiang Y. Kartogenin Induced Adipose-Derived Stem Cell Exosomes Enhance the Chondrogenic Differentiation Ability of Adipose-Derived Stem Cells. Dis Markers. 2022 Aug 29;2022:6943630. doi: 10.1155/2022/6943630. PMID: 36072901; PMCID: PMC9444430.

In vivo study

 Chen Y, Zhou L, Ding Y, Yang X, Jing J, Wu X, Zhang J, Lu Z. Kartogenin regulates hair growth and hair cycling transition. Int J Med Sci. 2022 Mar 6;19(3):537-545. doi: 10.7150/ijms.68434. PMID: 35370470; PMCID: PMC8964329.
Hou M, Zhang Y, Zhou X, Liu T, Yang H, Chen X, He F, Zhu X. Kartogenin prevents cartilage degradation and alleviates osteoarthritis progression in mice via the miR-146a/NRF2 axis. Cell Death Dis. 2021 May 13;12(5):483. doi: 10.1038/s41419-021-03765-x. PMID: 33986262; PMCID: PMC8119954.

Product data sheet



7. Bioactivity

Biological target:

Kartogenin (KGN) is an inducer of differentiation of human mesenchymal stem cells into chondrocytes, with an EC50 of 100 nM.

In vitro activity

KGN (kartogenin) enhanced the osteogenic differentiation capacity of BMMSCs without affecting cell proliferation, during which autophagic activities and the expression of autophagy-related genes were promoted. Moreover, KGN upregulated the phosphorylation level of the Smad1/5/9 signaling, and inhibition and activation of Smad signaling were also applied to validate the involvement of Smad in BMMSCs during KGN treatment.

Reference: Stem Cells Int. 2022 Dec 22;2022:1278921. https://pubmed.ncbi.nlm.nih.gov/36591373/

In vivo activity

Injection of kartogenin delayed catagen phase and increased regenerated hair length in mice in vivo.

Reference: Int J Med Sci. 2022 Mar 6;19(3):537-545. https://pubmed.ncbi.nlm.nih.gov/35370470/

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.