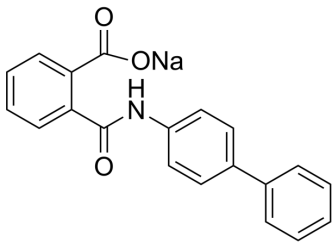
Kartogenin sodium

Cat. No.:	HY-16268A
CAS No.:	1401168-39-5
Molecular Formula:	$C_{20}H_{14}NNaO_3$
Molecular Weight:	339.32
Target:	TGF-beta/Smad
Pathway:	Stem Cell/Wnt; TGF-beta/Smad
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



BIOLOGICAL ACTIVITY

Description	Kartogenin (KGN) sodium is an inducer of chondrogenic tissue formation (EC_{50}: 100 nM). Kartogenin sodium induces chondrogenesis by binding to fibrin A, disrupting its interaction with the transcription factor core binding factor beta subunit (CBFβ), and by modulating the CBFβ-RUNX1 transcriptional program. Kartogenin sodium also promotes tendon-bone junction (TBJ) wound healing by stimulating collagen synthesis. Kartogenin sodium is widely used in cell-free therapy in the field of regeneration for cartilage regeneration and protection, tendon-bone healing, wound healing and limb development. Kartogenin sodium promotes cartilage repair, coordinates limb development, and is also used in osteoarthritis (OA) research[1][2][3][4].
In Vitro	Kartogenin sodium (100 nM; 72 h) induces chondrocyte nodule formation in primary hMSCs[1]. Kartogenin sodium (10 nM-10 μM; 72 h) increases chondrocyte-specific gene expression in hMSCs[1]. Kartogenin sodium (0.12-10 μM; 48 h) inhibits nitric oxide (NO) and glycosaminoglycan (GAG) release induced by cytokines in primary bovine articular chondrocytes[1]. Kartogenin sodium (50-5000 nM; 2 weeks) induces the chondrogenetic differentiation of the BMSCs in a concentration-dependent manner[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Kartogenin sodium (10 μM in 4 μL of saline; i.a. on days 7 and 21) promotes cartilag erepair in collagenase VII-induced OA models in mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Bull. 2023 Aug 1.
- Chem Eng J. 1 March 2022, 133861.
- Chem Eng J. 400 (2020) 126004.
- Biomaterials. 2022 Jun;285:121530.
- Biomaterials. December 2021, 121216.

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REFERENCES

[1]. Cai J, Zhang L, Chen J, et al. Kartogenin and its application in regenerative medicine[J]. Current medical science, 2019, 39(1): 16-20.

[2]. Zhang J, Wang J H C. Kartogenin induces cartilage-like tissue formation in tendon–bone junction[J]. Bone research, 2014, 2(1): 1-10.

[3]. Johnson K, et, al. A stem cell-based approach to cartilage repair. Science. 2012 May 11;336(6082):717-21.

[4]. Liu F, et, al. A novel kartogenin-platelet-rich plasma gel enhances chondrogenesis of bone marrow mesenchymal stem cells in vitro and promotes wounded meniscus healing in vivo. Stem Cell Res Ther. 2019 Jul 8;10(1):201.

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