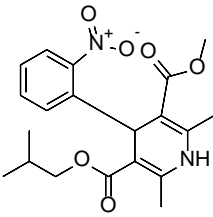


Product data sheet



MedKoo Cat#: 318368 Name: Nisoldipine CAS: 63675-72-9 Chemical Formula: C ₂₀ H ₂₄ N ₂ O ₆ Exact Mass: 388.1634 Molecular Weight: 388.4144	
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:

Nisoldipine is a dihydropyridine calcium channel antagonist that acts as a potent arterial vasodilator and antihypertensive agent. It is also effective in patients with cardiac failure and angina.

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	77.24
DMSO	69.0	177.65
DMSO:PBS (pH 7.2) (1:10)	0.1	0.26
Ethanol	3.0	7.72

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.57 mL	12.87 mL	25.75 mL
5 mM	0.51 mL	2.57 mL	5.15 mL
10 mM	0.26 mL	1.29 mL	2.57 mL
50 mM	0.05 mL	0.26 mL	0.51 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

- Chen X, Liu H, Pan Z, Miao Q, Zhang Y. The inhibitory effects of m-nisoldipine on the 5-hydroxytryptamine-induced proliferation of pulmonary artery smooth muscle cells via Ca²⁺ antagonism and antioxidant mechanisms. *Eur J Pharmacol.* 2012 Jul 5;686(1-3):32-40. doi: 10.1016/j.ejphar.2012.04.044. Epub 2012 May 2. PMID: 22575515.
- Missan S, Zhabyeyev P, Dyachok O, Jones SE, McDonald TF. Block of cardiac delayed-rectifier and inward-rectifier K⁺ currents by nisoldipine. *Br J Pharmacol.* 2003 Nov;140(5):863-70. doi: 10.1038/sj.bjp.0705518. Epub 2003 Oct 6. PMID: 14530219; PMCID: PMC1574108.

In vivo study

- Sun Y, Liu Y, Zhang X, Wan C, Lyu T, Zhang L. Effects of m-nisoldipine on the activity and mRNA expression of four CYP isozymes in rats. *Xenobiotica.* 2018 Jul;48(7):676-683. doi: 10.1080/00498254.2017.1358831. Epub 2017 Aug 4. PMID: 28756727.
- Verma M, Bali A, Singh N, Jaggi AS. Investigating the role of nisoldipine in foot-shock-induced post-traumatic stress disorder in mice. *Fundam Clin Pharmacol.* 2016 Apr;30(2):128-36. doi: 10.1111/fcp.12174. Epub 2016 Jan 18. PMID: 26662718.

Product data sheet



7. Bioactivity

Biological target:

Nisoldipine(BAY-k 5552; Sular) is a calcium channel blocker.

In vitro activity

Nisoldipine inhibited I(Kr) with an IC(50) of 23 microM, and I(Ks) with an IC(50) of 40 microM. The drug also had weak inhibitory effects on inward- and outward-directed I(K1); the IC(50) determined for outward-directed current was 80 microM. Investigation of nisoldipine action on I(Ks) showed that inhibition occurred in the absence of previous pulsing, and with little change in the time courses of activation and deactivation.

Reference: Br J Pharmacol. 2003 Nov;140(5):863-70. <https://pubmed.ncbi.nlm.nih.gov/14530219/>

In vivo activity

The corresponding pharmacokinetic parameters were applied to evaluate the effects of m-nisoldipine on the four CYP isoforms in vivo. In addition, RT-qPCR was performed to determine the effects of m-nisoldipine on the mRNA expression of CYPs in rat liver. Results indicated that high dose and middle dose of m-nisoldipine showed significant effects on all four CYPs and CYP2C11, respectively. Moreover, for CYP2D1 and CYP1A2, there were no significant effects found at either low or middle dose of m-nisoldipine.

Reference: Xenobiotica. 2018 Jul;48(7):676-683. <https://pubmed.ncbi.nlm.nih.gov/28756727/>

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.