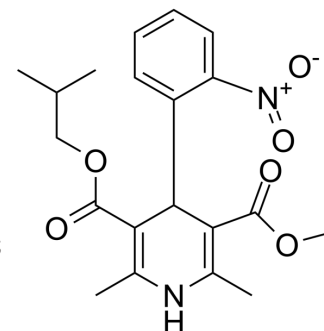


Nisoldipine

Cat. No.:	HY-17402
CAS No.:	63675-72-9
Molecular Formula:	C ₂₀ H ₂₄ N ₂ O ₆
Molecular Weight:	388.41
Target:	Calcium Channel; Reactive Oxygen Species
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (257.46 mM; Need ultrasonic)
H₂O : < 0.1 mg/mL (insoluble)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.5746 mL	12.8730 mL	25.7460 mL
	5 mM	0.5149 mL	2.5746 mL	5.1492 mL
	10 mM	0.2575 mL	1.2873 mL	2.5746 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (6.44 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (6.44 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Nisoldipine (BAY-k 5552; Sular) is a calcium channel blocker belonging to the dihydropyridines class, specific for L-type Cav1.2 with IC₅₀ of 10 nM. IC₅₀ value: 10 nM. Target: L-type Cav1.2. Nisoldipine is a potent blocker of L-type calcium channels. Nisoldipine binds directly to inactive calcium channels stabilizing their inactive conformation. Similar to other DHP CCBs, Nisoldipine displays selectivity for arterial smooth muscle cells due to great number of inactive channels and the α1 subunit of the channel. Nisoldipine is about 30 times less selective for delayed-rectifier K⁺ channels than for L-type Ca²⁺ channels, which inhibits IKr (rapidly activating delayed-rectifier K⁺ current) with IC₅₀ of 23 μM, and IKs (slowly activating delayed-rectifier K⁺ current) with IC₅₀ of 40 μM in guinea-pig ventricular myocytes. Nisoldipine also displays antioxidant potency with IC₅₀ of 28.2 μM both before and after the addition of active oxygen.

CUSTOMER VALIDATION

- Anim Nutr. 28 September 2021.

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REFERENCES

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- [3]. D.J. Duncker, J.M. Hartog, P.G. Hugenholtz, et al. The effects of nisoldipine (Bay K 5552) on cardiovascular performance and regional blood flow in pentobarbital - anaesthetized pigs with or without β -adrenoceptor blockade. *British Journal of Pharmacology*
- [4]. Jan W. De Jong, Tom Huizer, Jan G.P. Tijssen. Energy conservation by nisoldipine in ischaemic heart. *British Journal of Pharmacology.* 1984, 83(4): 943-949
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Caution: Product has not been fully validated for medical applications. For research use only.

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