L-NIO dihydrochloride

Cat. No.: HY-100986

CAS No.: 159190-44-0

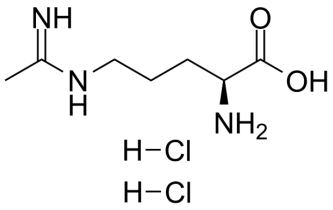
Molecular Formula: $C_7H_{17}Cl_2N_3O_2$

Molecular Weight: 246.13

Target: NO Synthase

Pathway: Immunology/Inflammation

Storage: -20°C, stored under nitrogen, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 125 mg/mL (507.86 mM; Need ultrasonic)
DMSO : 33.33 mg/mL (135.42 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.0629 mL	20.3145 mL	40.6289 mL
	5 mM	0.8126 mL	4.0629 mL	8.1258 mL
	10 mM	0.4063 mL	2.0314 mL	4.0629 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (406.29 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.16 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.16 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.16 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

L-NIO dihydrochloride is a potent, non-selective and NADPH-dependent nitric oxide synthase (NOS) inhibitor, with K_is of 1.7, 3.9, 3.9 μM for neuronal (nNOS), endothelial (eNOS), and inducible (iNOS), respectively[1][2]. L-NIO dihydrochloride induces a consistentfocal ischemic infarctin rats[2].

IC_{50} & Target

Ki: 1.7 μM (nNOS), 3.9 μM (eNOS), 3.9 μM (iNOS)[1]

In Vitro	L-NIO is a potent, non-selective and NADPH-dependent nitric oxide synthase (NOS) inhibitor, with K_is of 1.7, 3.9, 3.9 μM for neuronal (nNOS), endothelial (eNOS), and inducible (iNOS), respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	L-NIO (2.0 μmol, 3 days post-ischemia) causes focal cerebral ischemia in the adult rat brain[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult male Sprague Dawley rats (250-350 g)[2]
Dosage:	0.04-2.0 μmol/(3.0-5.0 μL) per rat
Administration:	Injected into striatum 3 days post-ischemia
Result:	2.0 μmol L-NIO produced an infarct significantly different in volume from sham animals.

CUSTOMER VALIDATION

- Cell Mol Gastroenterol Hepatol. 2021;11(3):683-696.

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REFERENCES

[1]. Babu BR, et al. N5-(1-Imino-3-butenyl)-L-ornithine. A neuronal isoform selective mechanism-based inactivator of nitric oxide synthase. J Biol Chem. 1998 Apr 10;273(15):8882-9.

[2]. Van Slooten AR, et al. L-NIO as a novel mechanism for inducing focal cerebral ischemia in the adult rat brain. J Neurosci Methods. 2015 Apr 30;245:44-57.

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