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Produktinformation

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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NNMTi

Cat. No.: HY-131042

CAS No.: 42464-96-0

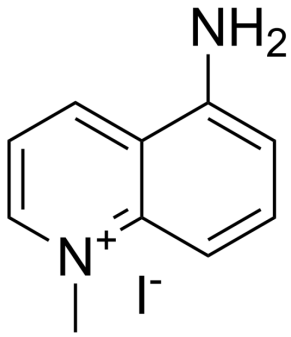
Molecular Formula: $C_{10}H_{11}IN_2$

Molecular Weight: 286.11

Target: Others

Pathway: Others

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20.83 mg/mL (72.80 mM; ultrasonic and warming and heat to 60°C)
H_2O : 2.27 mg/mL (7.93 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.4952 mL	17.4758 mL	34.9516 mL
5 mM	0.6990 mL	3.4952 mL	6.9903 mL
10 mM	0.3495 mL	1.7476 mL	3.4952 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (7.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NNMTi is a potent nicotinamide N-methyltransferase (NNMT) inhibitor (IC_{50}=1.2 μM) and selectively binds to the NNMT substrate-binding site residues[2]. NNMTi promotes myoblast differentiation in vitro and enhances fusion and regenerative capacity of muscle stem cells (muSCs) in aged mice[1].

In Vitro

NNMTi (10-30 μM; 96 hours) produces a concentration-related increase in myoblast differentiation on C2C12 myoblast differentiation. 30 μM NNMTi results in 18% MHC-positive myotube nuclei, representing a 45% increase in the extent of myoblast differentiation compared to untreated differentiating myoblasts (12% MHC-positive myotube nuclei)[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

NNMTi (subcutaneous (SC) injection; 5 mg/kg and 10 mg/kg; 2 weeks (1 week pre-injury and 1 week post-injury)) has an

effect on muscle regeneration after injury, it results in 60% and 75% higher incidence of proliferating/active muSCs at 5 mg/kg and 10 mg/kg, respectively. The relative numbers of fibers with an EdU^+ myonucleus increased 40% and 48% with NNMTi treatment at 5 mg/kg and 10 mg/kg, respectively. The odds ratio of fused myonuclei for control are 0.58 and 0.53 times the odds at the low and high NNMTi dose, respectively[2].

NNMTi (subcutaneous injection; 10 mg/kg; 1 week) produces no systemic toxicity in mice, the levels of the glucose, cholesterol, plasma proteins, and electrolytes between control and NNMTi-treated samples show no difference in mice. 1-week post-injury daily repeat-dosing of NNMTi is well tolerated with no untoward systemic toxicity or behavioral implications in aged mice[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Gut. 2023 Mar 28;gutjnl-2022-328408.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Harshini Neelakantan, et al. Small molecule nicotinamide N-methyltransferase inhibitor activates senescent muscle stem cells and improves regenerative capacity of aged skeletal muscle. Biochem Pharmacol. 2019 May;163:481-492.

[2]. Harshini Neelakantan, et al. Structure-Activity Relationship for Small Molecule Inhibitors of Nicotinamide N-Methyltransferase. J Med Chem

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