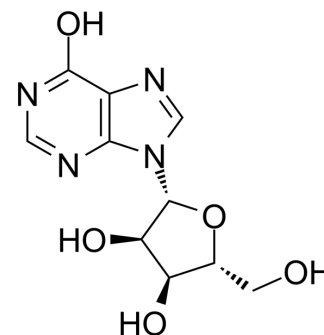


Inosine

Cat. No.:	HY-N0092		
CAS No.:	58-63-9		
Molecular Formula:	C ₁₀ H ₁₂ N ₄ O ₅		
Molecular Weight:	268.23		
Target:	Adenosine Receptor; Endogenous Metabolite		
Pathway:	GPCR/G Protein; Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (93.20 mM; Need ultrasonic)
 H₂O : 10 mg/mL (37.28 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.7281 mL	18.6407 mL	37.2814 mL
	5 mM	0.7456 mL	3.7281 mL	7.4563 mL
	10 mM	0.3728 mL	1.8641 mL	3.7281 mL

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

In Vivo

- Add each solvent one by one: PBS
 Solubility: 15.56 mg/mL (58.01 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: 2.5 mg/mL (9.32 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (9.32 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Inosine is an endogenous purine nucleoside produced by catabolism of adenosine. Inosine has anti-inflammatory, antinociceptive, immunomodulatory and neuroprotective effects. Inosine is an agonist for adenosine A₁ (A₁R) and A_{2A} (A_{2A}R) receptors^{[1][2][3]}.

IC₅₀ & Target

Human Endogenous Metabolite

A₁R

A_{2A}R

In Vitro	<p>Inosine dose-dependently stimulates cAMP production mediated through the A_{2A}R^[2].</p> <p>Inosine dose-dependently induces hA_{2A}R-mediated ERK1/2 phosphorylation^[2].</p> <p>Inosine (100 μM; 24 hours) reduces oxidative stress in MES 23.5 cells cultured with astrocytes^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
In Vivo	<p>Inosine (10-100 mg/kg; i.p.) exhibits antinociceptive effect in mice^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Male/female C57BL/6 mice^[2]</td> </tr> <tr> <td>Dosage:</td> <td>1 mg/kg, 10 mg/kg, 100 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>Intraperitoneal injection, 20 min before formalin treatment</td> </tr> <tr> <td>Result:</td> <td>Reduced flinching behaviour induced by formalin (2 %; 20 μL; intraplantar injection).</td> </tr> </table>	Animal Model:	Male/female C57BL/6 mice ^[2]	Dosage:	1 mg/kg, 10 mg/kg, 100 mg/kg	Administration:	Intraperitoneal injection, 20 min before formalin treatment	Result:	Reduced flinching behaviour induced by formalin (2 %; 20 μL; intraplantar injection).
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REFERENCES

- [1]. Filipe Marques Gonçalves, et al. Signaling pathways underlying the antidepressant-like effect of inosine in mice. *Purinergic Signal*. 2017 Jun; 13(2): 203-214.
- [2]. Ajith A. Welihinda, et al. The adenosine metabolite inosine is a functional agonist of the adenosine A_{2A} receptor with a unique signaling bias. *Cell Signal*. 2016 Jun; 28(6): 552-560.
- [3]. Francisney Pinto Nascimento, et al. Adenosine A₁ receptor-dependent antinociception induced by inosine in mice: pharmacological, genetic and biochemical aspects. *Mol Neurobiol*. 2015;51(3):1368-78.
- [4]. Sara Cipriani, et al. Protection by inosine in a cellular model of Parkinson's disease. *Neuroscience*. 2014 Aug 22; 274: 242-249.

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