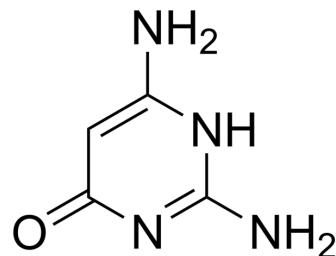


2,4-Diamino-6-hydroxypyrimidine

Cat. No.:	HY-100954
CAS No.:	56-06-4
Molecular Formula:	C ₄ H ₆ N ₄ O
Molecular Weight:	126
Target:	NO Synthase
Pathway:	Immunology/Inflammation
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 16.67 mg/mL (132.30 mM; Need ultrasonic)						
	H ₂ O : 10 mg/mL (79.37 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	
				1 mM	7.9365 mL	39.6825 mL	79.3651 mL
				5 mM	1.5873 mL	7.9365 mL	15.8730 mL
10 mM				0.7937 mL	3.9683 mL	7.9365 mL	
Please refer to the solubility information to select the appropriate solvent.							
In Vivo	1. Add each solvent one by one: PBS Solubility: 6.5 mg/mL (51.59 mM); Clear solution; Need ultrasonic						
	2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 1.67 mg/mL (13.25 mM); Clear solution						
	3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 1.67 mg/mL (13.25 mM); Clear solution						
	4. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 1.67 mg/mL (13.25 mM); Clear solution						

BIOLOGICAL ACTIVITY

Description	2,4-Diamino-6-hydroxypyrimidine is a specific GTP cyclohydrolase I inhibitor (the rate-limiting enzyme in de novo pterin synthesis). 2,4-Diamino-6-hydroxypyrimidine blocks Tetrahydrobiopterin (BH4) synthesis and suppresses NO production ^[1] [2].
IC ₅₀ & Target	GTP cyclohydrolase I ^[1]

In Vitro	<p>2,4-Diamino-6-hydroxypyrimidine (DAHP) exhibits a dose-dependent reduction in NO production in both chicken peritoneal macrophages (PECs) and the avian MC29 virus-transformed macrophage cell line, HD11^[1].</p> <p>2,4-Diamino-6-hydroxypyrimidine (DAHP; 5 mM; 24 hours) treatment significantly reduces both BH4 and VCAM-1 levels during the time course in HUVEC cells. 2,4-Diamino-6-hydroxypyrimidine reduces VCAM-1 and GTPCH protein synthesis at least partially via suppressing the NF-κB level in the nucleus of HUVEC^[2].</p> <p>2,4-Diamino-6-hydroxypyrimidine (DAHP) is first identified as an inhibitor of the biopterin-dependent growth of the protozoan <i>Crithidia fasciculata</i>^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>When 2,4-Diamino-6-hydroxypyrimidine (DAHP) is administered for 4 days at the dose of 3 g/kg/day in mice, serotonin decreased in the duodenum and colon to approximately 46% and 40% of the control levels, respectively. 2,4-Diamino-6-hydroxypyrimidine causes a rapid decrease ($T_{1/2}$ of less than 12 hr) in the BH4 levels in all tissues examined, except in the brain. The BH4 level returned to within the normal range less than 24 hr after cessation of the administration of 2,4-Diamino-6-hydroxypyrimidine^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Front Cell Dev Biol. 2022 Feb 10:10:810327.

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REFERENCES

- [1]. Sung YJ, et al. 2,4-Diamino-6-hydroxypyrimidine, an inhibitor of GTP cyclohydrolase I, suppresses nitric oxide production by chicken macrophages. *Int J Immunopharmacol.* 1994 Feb;16(2):101-8.
- [2]. Kazuhisa Ikemoto, et al. 2,4-Diamino-6-hydroxypyrimidine (DAHP) suppresses cytokine-induced VCAM-1 expression on the cell surface of human umbilical vein endothelial cells in a BH(4)-independent manner. *Biochim Biophys Acta.* Jul-Aug 2008;1780(7-8):960-5.
- [3]. T Kobayashi, et al. Gastrointestinal serotonin: depletion due to tetrahydrobiopterin deficiency induced by 2,4-diamino-6-hydroxypyrimidine administration. *J Pharmacol Exp Ther.* 1991 Feb;256(2):773-9.

Caution: Product has not been fully validated for medical applications. For research use only.

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