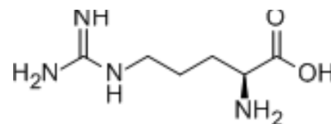


L-Arginine

Cat. No.:	HY-N0455
CAS No.:	74-79-3
Molecular Formula:	C ₆ H ₁₄ N ₄ O ₂
Molecular Weight:	174.2
Target:	NO Synthase; Endogenous Metabolite
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease
Storage:	<div> Powder -20°C 3 years </div> <div> 4°C 2 years </div> <div> In solvent -80°C 6 months </div> <div> -20°C 1 month </div>



SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 50 mg/mL (287.03 mM; Need ultrasonic)					
	Preparing Stock Solutions	<div>Solvent Concentration</div>	Mass	1 mg	5 mg	10 mg
		1 mM	5.7405 mL	28.7026 mL	57.4053 mL	
		5 mM	1.1481 mL	5.7405 mL	11.4811 mL	
	10 mM	0.5741 mL	2.8703 mL	5.7405 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 (574.05 mM); Clear solution; Need ultrasonic					

BIOLOGICAL ACTIVITY

Description	L-Arginine ((S)-(+)-Arginine) is the substrate for the endothelial nitric oxide synthase (eNOS) to generate NO. L-Arginine is transported into vascular smooth muscle cells by the cationic amino acid transporter family of proteins where it is metabolized to nitric oxide (NO), polyamines, or L-proline. L-Arginine is a potent vasodilator, and can be used to induce experimental acute pancreatitis ^{[1][2][3][4][5]} .		
IC ₅₀ & Target	Microbial Metabolite	Human Endogenous Metabolite	eNOS
In Vivo	L-Arginine has been widely accepted as a method to induce experimental acute pancreatitis ^{[4][5]} . Dose reference for L-Arginine induction ^{[4][5]} : (1) Model animal: Male Wistar albino rats		

Acute pancreatitis: single i.p. injection of 500 mg of L-arginine/100 g body weight

(2) Model animal: Male ICR mice

Acute pancreatitis: i.p. with 2.25g/kg body weight of L-Arginine hourly for 2 hours

Dissolution method of L-Arginine^[5]:

L-arginine solution was prepared by dissolving L-arginine powder in 0.9% normal saline and adjusting the pH to 7 with 5 N HCl.

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

CUSTOMER VALIDATION

- Nat Protoc. 2021 Jan;16(1):431-457.
- Nutrients. 2023 Oct 18, 15(20), 4427.
- Viruses. 2021 Jun 26;13(7):1236.
- Dig Dis Sci. 2022 Jul 4.
- Pancreas. 2020 Jan;49(1):111-119.

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- [1]. Mizunuma T, et al. Effects of injecting excess arginine on rat pancreas. J Nutr. 1984 Mar;114(3):467-71.
- [2]. Siriviriyakul P, et al. Effects of curcumin on oxidative stress, inflammation and apoptosis in L-arginine induced acute pancreatitis in mice. Heliyon. 2019 Aug 27;5(8):e02222.
- [3]. Tapiero H, et al. I. Arginine. Biomed Pharmacother. 2002 Nov;56(9):439-45.
- [4]. Bakker J, et al. Administration of the nitric oxide synthase inhibitor NG-methyl-L-arginine hydrochloride (546C88) by intravenous infusion for up to 72 hours can promote the resolution of shock in patients with severe sepsis: results of a randomized, double-blind, placebo-controlled multicenter study (study no. 144-002). Crit Care Med. 2004 Jan;32(1):1-12.
- [5]. Yamada M, et al. Endothelial nitric oxide synthase-dependent cerebral blood flow augmentation by L-arginine after chronic statin treatment. J Cereb Blood Flow Metab. 2000 Apr;20(4):709-17.

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

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