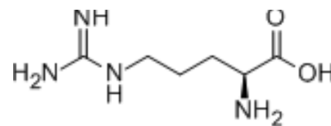


L-Arginine

| | |
|--------------------|--|
| 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: | Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month |



SOLVENT & SOLUBILITY

| | | | | | | |
|---|--|---|-----------|-----------|------------|------------|
| In Vitro | H ₂ O : 50 mg/mL (287.03 mM; Need ultrasonic) | | | | | |
| | Preparing Stock Solutions | <div><div>Solvent</div><div>Concentration</div></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. L-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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