Adenine hemisulfate

Cat. No.: HY-B0152B

CAS No.: 321-30-2

Molecular Formula: $C_5H_5N_5.1/2H_2SO_4$

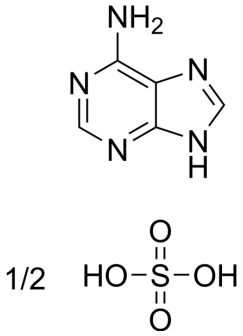
Molecular Weight: 184.17

Target: DNA/RNA Synthesis; Endogenous Metabolite

Pathway: Cell Cycle/DNA Damage; Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (542.98 mM; Need ultrasonic)

H_2O : 5 mg/mL (27.15 mM; ultrasonic and heat to 50°C)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	5.4298 mL	27.1488 mL	54.2977 mL
5 mM	1.0860 mL	5.4298 mL	10.8595 mL
10 mM	0.5430 mL	2.7149 mL	5.4298 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: ≥ 2.5 mg/mL (13.57 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (13.57 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (13.57 mM); Clear solution
4. Add each solvent one by one: PBS
   Solubility: 2 mg/mL (10.86 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

Adenine hemisulfate (6-Aminopurine hemisulfate), a purine, is one of the four nucleobases in the nucleic acid of DNA. Adenine hemisulfate acts as a chemical component of DNA and RNA. Adenine hemisulfate also plays an important role in biochemistry involved in cellular respiration, the form of both ATP and the cofactors (NAD and FAD), and protein synthesis[1] [2].

IC_{50} & Target	Microbial Metabolite	Human Endogenous Metabolite

In Vivo

Induction of Chronic Kidney Disease (CKD)[4][5][6]

- Background

  Adenine is metabolized by the liver to form dihydroxyadenine, which is insoluble in water. The latter is deposited in the kidneys, which can cause post-renal obstruction, affect uric acid excretion, and cause kidney damage.

- Specific Mmodeling Methods

  Mice: C57BL/6J • 8?weeks of age
  Administration: 0.2% Adenine in diet; 3?weeks
  Rat: Sprague–Dawley (SD) • male • 8?weeks of age
  Administration: 0.5% Adenine in diet; 3?weeks

- Modeling Indicators

  Biochemical changs: KW-to-BW ratio increasing; Systolic and diastotic blood pressure increasing; Blood urea nitrogen increasing; serum creatinine levels increasing

- Opposite Product(s):

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

CUSTOMER VALIDATION

- Phytomedicine. 2022 Mar 21;100:154067.
- Talanta. 2023 Sep 6, 125171.
- Molecules. 2023 Apr 11, 28(8), 3375.
- Pharmaceuticals. 2023, 16(3), 361.
- Biosci Rep. 2021 Oct 29;41(10):BSR20211598.

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REFERENCES

[1]. ORO J, et al. Synthesis of purines under possible primitive earth conditions. I. Adenine from hydrogen cyanide. Arch Biochem Biophys. 1961 Aug;94:217-27.

[2]. Griffiths AJF, et al. An Introduction to Genetic Analysis. 7th edition. New York: W. H. Freeman; 2000. Structure of DNA.

[3]. Reader V. The assay of vitamin B(4). Biochem J. 1930;24(6):1827-31.

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