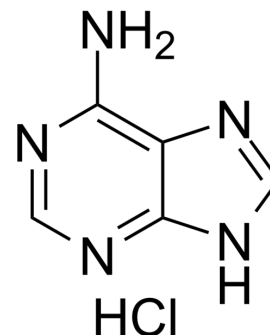


Adenine hydrochloride

| | | | |
|---------------------------|--|-------|----------|
| Cat. No.: | HY-B0152A | | |
| CAS No.: | 2922-28-3 | | |
| Molecular Formula: | C ₅ H ₆ ClN ₅ | | |
| Molecular Weight: | 171.59 | | |
| Target: | DNA/RNA Synthesis; Endogenous Metabolite | | |
| Pathway: | Cell Cycle/DNA Damage; 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 : 50 mg/mL (291.39 mM; ultrasonic and warming and heat to 60°C)
 H₂O : 10 mg/mL (58.28 mM; ultrasonic and warming and heat to 60°C)

| Preparing Stock Solutions | Solvent \ Mass | 1 mg | 5 mg | 10 mg |
|---------------------------|----------------|-----------|------------|------------|
| | Concentration | | | |
| | 1 mM | 5.8278 mL | 29.1392 mL | 58.2785 mL |
| | 5 mM | 1.1656 mL | 5.8278 mL | 11.6557 mL |
| | 10 mM | 0.5828 mL | 2.9139 mL | 5.8278 mL |

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

BIOLOGICAL ACTIVITY

Description

Adenine hydrochloride (6-Aminopurine hydrochloride), a purine, is one of the four nucleobases in the nucleic acid of DNA. Adenine hydrochloride acts as a chemical component of DNA and RNA. Adenine hydrochloride 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][3].

IC₅₀ & 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 Modeling 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 changes: KW-to-BW ratio increasing; Systolic and diastolic 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.

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

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