6-Azathymine

Cat. No.: HY-136559

CAS No.: 932-53-6

Molecular Formula: $C_4H_5N_3O_2$

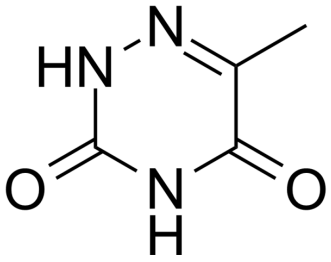
Molecular Weight: 127.1

Target: Nucleoside Antimetabolite/Analog; Bacterial; Influenza Virus; DNA/RNA Synthesis

Pathway: Cell Cycle/DNA Damage; Anti-infection

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 : 125 mg/mL (983.48 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	7.8678 mL	39.3391 mL	78.6782 mL
	5 mM	1.5736 mL	7.8678 mL	15.7356 mL
	10 mM	0.7868 mL	3.9339 mL	7.8678 mL

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

BIOLOGICAL ACTIVITY

Description

6-Azathymine, a 6-nitrogen analog of thymine, is a potent D-3-aminoisobutyrate-pyruvate aminotransferase inhibitor. 6-Azathymine inhibits the biosynthesis of DNA, and has antibacterial and antiviral activities[1][2][3][4].

In Vitro

6-Azathymine is a competitive antagonist of the growth of Streptococcus faecalis (8043) and several other strains of microorganisms. Studies of the mechanism of action of 6-Azathymine reveal that S. faecalis can convert the analog to the corresponding deoxyriboside, azathymidine[2].

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

In Vivo

The administration of 6-Azathymine to the mouse leads to the urinary elimination not only of free Azathymine, but also of various metabolites of it. Following the administration of 6-Azathymine-5-^{14}C to mice, radioactivity is found in all tissues investigated, not only in the form of free Azathymine, but also as metabolic derivatives[3].

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REFERENCES

[1]. N Tamaki, et al. Purification, Characterization and Inhibition of D-3-aminoisobutyrate Aminotransferase From the Rat Liver. Eur J Biochem. 1990 Apr 20;189(1):39-45.

[2]. W H PRUSOFF, et al. Effect of the Deoxyriboside of 6-azathymine (Azathymidine) on the Biosynthesis of Deoxyribonucleic Acid by Bone Marrow and Neoplastic Cells (In Vitro). Biochim Biophys Acta. 1956 Apr;20(1):209-14.

[3]. R A GAITO, et al. Studies on the Metabolism of Thymine and 6-azathymine. Biochem Pharmacol. Apr-May 1962;11:323-36.

[4]. B. Gabrielsen, et al. In vitro and in vivo antiviral (RNA) evaluation of orotidine 51-monophosphatedecarboxylase inhibitors and analogues including 6-azauridine-51-(ethylmethoxyalaninyl)phosphate (a 51-monophosphate prodrug). Antiviral Chemistry & Chemotherapy (1994) 5(4), 209-220.

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