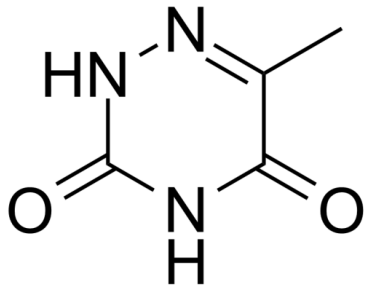
Data Sheet

Product Name:	6-Azathymine
Cat. No.:	CS-0131257
CAS No.:	932-53-6
Molecular Formula:	$C_4H_5N_3O_2$
Molecular Weight:	127.10
Target:	Bacterial; DNA/RNA Synthesis; Influenza Virus; Nucleoside Antimetabolite/Analog
Pathway:	Anti-infection; Cell Cycle/DNA Damage
Solubility:	10 mM in DMSO



BIOLOGICAL ACTIVITY:

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]. **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].

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.

CAIndexNames:

1,2,4-Triazine-3,5(2H,4H)-dione, 6-methyl-

SMILES:

O=C(N1)NN=C(C)C1=O

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

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