
Product Data Sheet

Product Name: Psicofuranine

Cat. No.: GC12081

Chemical Properties

Cas. No. 1874-54-0

Chemical Name 1'-C-(hydroxymethyl)-adenosine

SMILES OC[C@@H]1[C@@H](O)[C@@H](O)[C@@](N2C=NC3=C2N=CN=C3N)(CO)O1Formula C₁₁H₁₅N₅O₅ M.Wt 297.3

Solubility DMSO : 50 mg/mL (168.20 mM; Need ultrasonic and warming) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Background**

Psicofuranine is an antibiotic that acts as an inhibitor of xanthosine 5'-phosphate (XMP) aminase with IC₅₀ value of 67 μM [1][2][3].

Xanthosine 5'-phosphate (XMP) aminase is an enzyme essential for guanine nucleotide synthesis and possess catalytic activity with either glutamine or ammonia as a substrate [2][3].

Psicofuranine (9-n-psicofuranosy-6-aminopurine) is an antibiotic that acts as an inhibitor of xanthosine 5'-phosphate (XMP) aminase with IC₅₀ value of 67 μM. In unfractionated preparations of both strains B-24 and B-35-2, 6.7 X 10⁻⁵M psicofuranin inhibited 50% XMP aminase after 2 minutes. Psicofuranine caused a guanine deficiency in enteric bacteria by inhibition of XMP aminase [2]. Psicofuranine-inhibited aminase couldn't catalyze the aminolysis of the preformed intermediate to AMP and GMP, nor could it

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condense ATP and XMP to form the intermediate [3]. Psicofuranine had good antibacterial activity in vivo and antitumor activity [1].

References:

- [1]. Ladislav J. Hanka. MECHANISM OF ACTION OF PSICOFURANINE. J Bacteriol. 1960 Jul; 80(1): 30-36.
- [2]. UDAKA S, MOYED HS. INHIBITION OF PARENTAL AND MUTANT XANTHOSINE 5'-PHOSPHATE AMINASES BY PSICOFURANINE. J Biol Chem. 1963 Aug;238:2797-803.
- [3]. Fukuyama TT. Formation of an adenylyl xanthosine monophosphate intermediate by xanthosine 5'-phosphate aminase and its inhibition by psicofuranine. J Biol Chem. 1966 Oct 25;241(20):4745-9.

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