Sodium 4-aminosalicylate dihydrate

Cat. No.: HY-I0447A

CAS No.: 6018-19-5

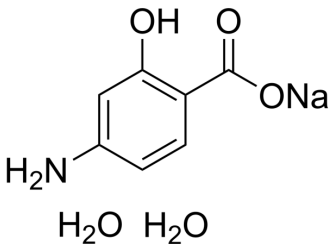
Molecular Formula: $C_7H_{10}NNaO_5$

Molecular Weight: 211.15

Target: Bacterial; Antibiotic

Pathway: Anti-infection

Storage: 4°C, protect from light, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (473.60 mM; Need ultrasonic)
DMSO : 100 mg/mL (473.60 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.7360 mL	23.6798 mL	47.3597 mL
5 mM	0.9472 mL	4.7360 mL	9.4719 mL
10 mM	0.4736 mL	2.3680 mL	4.7360 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (473.60 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (11.84 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (11.84 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (11.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sodium 4-aminosalicylate (Sodium para-Aminosalicylic acid) dihydrate is para-aminosalicylic acid (PAS), a dihydrofolate reductase (DHFR) inhibitor and antituberculous agent. PAS is incorporated into the folate pathway via dihydropteroate synthase (DHPS) and dihydrofolate synthase (DHFS) to generate the hydroxydihydrofolate antimetabolite, which in turn inhibits DHFR enzyme activity[1][2][3].

In Vitro	Sodium 4-aminosalicylate inhibits M. tuberculosis H37Rv growth with MIC value of 0.4 μM[1]. Sodium 4-aminosalicylate (10 μM-0.1 mM; 3 h) significantly inhibits rDHFR activity in mycobacteria. M. bovis BCG[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Sodium 4-aminosalicylate dihydrate MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Zheng J, et al. para-Aminosalicylic acid is a prodrug targeting dihydrofolate reductase in Mycobacterium tuberculosis. J Biol Chem. 2013 Aug 9;288(32):23447-56.

[2]. Abdu-Allah HHM, et al. Conjugation of 4-aminosalicylate with thiazolinones afforded non-cytotoxic potent in vitro and in vivo anti-inflammatory hybrids. Bioorg Chem. 2020 Jan;94:103378.

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