Asp-AMS

Cat. No.: HY-112860

CAS No.: 828288-98-8

Molecular Formula: $C_{14}H_{19}N_7O_9S$

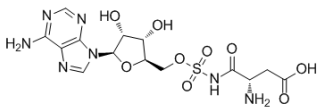
Molecular Weight: 461.41

Target: Aminoacyl-tRNA Synthetase; Mitochondrial Metabolism

Pathway: 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 : ≥ 100 mg/mL (216.73 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.1673 mL	10.8363 mL	21.6727 mL
5 mM	0.4335 mL	2.1673 mL	4.3345 mL
10 mM	0.2167 mL	1.0836 mL	2.1673 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.42 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.42 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.42 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Asp-AMS, an analogue of aspartyl-adenylate, is an aspartyl-tRNA synthetase inhibitor and also a strong competitive inhibitor of the mitochondrial enzyme.

IC_{50} & Target

Aspartyl-tRNA synthetase, Mitochondrial enzyme [1].

In Vitro

Asp-AMS is a 500-fold stronger competitive inhibitor of the mitochondrial enzyme than aspartol-AMP (10 nM) and a 35-fold

lower competitor of human and bovine cyt-AspRSs (300 nM). Asp-AMS is a strong inhibitor with K_i in the nanomolar (nM) range. Asp-AMS has also the highest inhibitory effect for the mitochondrial enzyme. Asp-AMS is the most active inhibitor with K_i values in the nanomolar range, with a stronger effect on bacterial AspRSs (E. coli and P. aeruginosa) than on human cytosolic AspRS[1].

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

REFERENCES

[1]. Messmer M, et al. Peculiar inhibition of human mitochondrial aspartyl-tRNA synthetase by adenylate analogs. Biochimie. 2009 May;91(5):596-603.

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