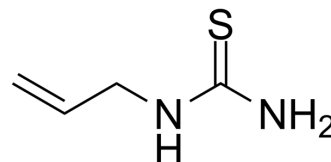


Allylthiourea

Cat. No.:	HY-B0543		
CAS No.:	109-57-9		
Molecular Formula:	C ₄ H ₈ N ₂ S		
Molecular Weight:	116.18		
Target:	Reactive Oxygen Species		
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (860.73 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	8.6073 mL	43.0367 mL	86.0733 mL
	5 mM	1.7215 mL	8.6073 mL	17.2147 mL
	10 mM	0.8607 mL	4.3037 mL	8.6073 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (21.52 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (21.52 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (21.52 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Allylthiourea is a metabolic inhibitor that selective inhibits ammonia oxidation. Target: Others Allylthiourea selectively inhibits ammonia oxidation at concentrations 8-80 μM. Allylthiourea (1 μM) inhibits ammonia oxidation by 80%. Complete inhibition is observed at an Allylthiourea concentration of 86 μM [1]. The inhibition of Allylthiourea on ammonia oxidation probably acts through chelating the copper of the ammonia monooxygenase active site. Allylthiourea is able to produce soluble methane monooxygenase (sMMO) in the presence of copper. Addition of 25 μM Allylthiourea decreases intracellular copper by 48% in *Methylosinus trichosporium* OB3b, allowing sMMO production at Cu/biomass ratios normally not

permitting sMMO synthesis, which achieves a plateau of 320 μmol naphthol formed per gram dry biomass per hour [2].

REFERENCES

[1]. Ginestet, P., et al., Estimation of nitrifying bacterial activities by measuring oxygen uptake in the presence of the metabolic inhibitors allylthiourea and azide. Appl Environ Microbiol, 1998. 64(6): p. 2266-8.

[2]. Yu, Y., J.A. Ramsay, and B.A. Ramsay, Use of allylthiourea to produce soluble methane monooxygenase in the presence of copper. Appl Microbiol Biotechnol, 2009. 82(2): p. 333-9.

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

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