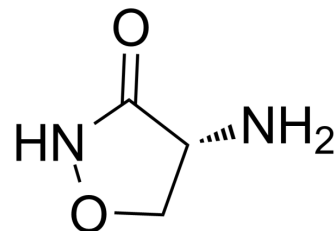


D-Cycloserine

Cat. No.:	HY-B0030		
CAS No.:	68-41-7		
Molecular Formula:	C ₃ H ₆ N ₂ O ₂		
Molecular Weight:	102.09		
Target:	iGluR; Bacterial; Antibiotic		
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H₂O : 25 mg/mL (244.88 mM; Need ultrasonic)
DMSO : 1 mg/mL (9.80 mM; Need warming)

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		9.7953 mL	48.9764 mL	97.9528 mL
	5 mM		1.9591 mL	9.7953 mL	19.5906 mL
	10 mM		0.9795 mL	4.8976 mL	9.7953 mL

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

In Vivo

1. Add each solvent one by one: PBS
Solubility: 11.11 mg/mL (108.83 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

D-Cycloserine is an antibiotic which targets sequential bacterial cell wall peptidoglycan biosynthesis enzymes. D-Cycloserine is a partial NMDA agonist that can improve cognitive functions. D-Cycloserine can be used for multidrug-resistant tuberculosis research^{[1][2]}.

In Vivo

D-Cycloserine selectively potentiates the duration of motor cortical excitability enhancements induced by anodal transcranial direct current (tDCS). D-Cycloserine alone does not modulate excitability.^[1]
Chronic D-Cycloserine (40 mg/kg; 5 days/week; for 2 weeks) significantly reduces nicotine self-administration selectively in rats with low baseline nicotine use, but is ineffective with the rats with higher levels of baseline nicotine self-administration^[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Nitsche, M.A., et al., Consolidation of human motor cortical neuroplasticity by D-cycloserine. *Neuropsychopharmacology*, 2004. 29(8): p. 1573-8.
- [2]. Levin, E.D., et al., D-cycloserine selectively decreases nicotine self-administration in rats with low baseline levels of response. *Pharmacol Biochem Behav*, 2011. 98(2): p. 210-4.
- [3]. Sarah Batson, et al. Inhibition of D-Ala:D-Ala ligase through a phosphorylated form of the antibiotic D-cycloserine. *Nat Commun*. 2017 Dec 5;8(1):1939.
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Caution: Product has not been fully validated for medical applications. For research use only.

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