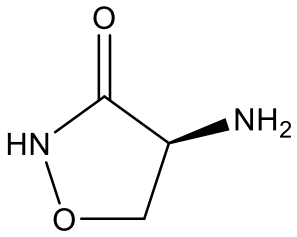
Catalog # 10-2280

L-Cycloserine

CAS# 339-72-0

(S)-4-Amino-3-isoxaolidinone; L-(-)-Cycloserine; S-Cycloserine

Lot # E102377



L-Cycloserine down-regulates sphingolipid biosynthesis via inhibition of serine palmitoyltransferase (3-ketodihydrosphingosine synthetase)[1]. The L isomer was shown to be 100-fold more potent than the D isomer at inhibition of the brain microsomal enzyme.[1] It is a useful pharmacological agent for lowering sphingolipid levels in cells[2] as well as in animal models[3]. Inhibition of *de novo* ceramide biosynthesis with L-cycloserine positively affected the senescent phenotype, restoring neuronal signaling and reducing mitochondrial dysfunction in a cortical neuronal model of senescence.[4]

1) Sundaram *et al*. (1984), *Inhibition of sphingolipid synthesis by cycloserine in vitro and in vivo*; J. Neurochem. **42** 577

2) Ribbens *et al*. (2014), *Characterization and application of a disease-cell model for a neurodegenerative lysosomal disease*; Mol. Genet. Metab., **111** 172

3) Lewandowski *et al*. (2022), *Inhibition of ceramide accumulation in AdipoR$^{-/-}$ mice increases photoreceptor survival and improves vision*; JCI Insight **7** e156301

4) Granzotto *et al*. (2019), *Inhibition of de novo ceramide biosynthesis affects aging phenotype in an in vitro model of neuronal senescence*; Aging (Albany NY) **11** 6336

PHYSICAL DATA

Molecular Weight:	102.09
Molecular Formula:	$C_3H_6N_2O_2$
Purity:	>98% by TLC
	NMR: (Conforms)
Solubility:	DMSO (20 mg/ml with warming); Water (25 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 2 years from the date of purchase. Solutions in DMSO or water may be stored at -20°C for up to 1 month.

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