

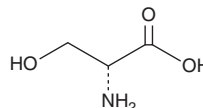
PRODUCT INFORMATION



D-Serine

Item No. 31197

CAS Registry No.: 312-84-5
Synonyms: NSC 77689, (R)-Serine
MF: C₃H₇NO₃
FW: 105.1
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

D-Serine is supplied as a solid. Aqueous solutions of D-serine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-serine in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

D-Serine is the dextrorotary isomer of the non-essential amino acid L-serine and a co-agonist of NMDA receptors.¹ It is formed by conversion of L-serine by serine racemase and found primarily in the brain.^{2,3} D-Serine binds to the glycine site of the NMDA receptor and potentiates glutamate-induced currents in oocytes expressing various subunit combinations (EC₅₀s = 0.17-0.32 μM) more potently than glycine.^{1,3} It reverses deficits in prepulse inhibition with prepulses of 69 and 73 decibels (dB), but not 81 dB, and increases the time spent in the target quadrant of the Morris water maze in mice with a mutant form of serine racemase (*Srr*^{Y269*}) when administered at a dose of 600 mg/kg.⁴ Serum levels of D-serine are decreased in patients with schizophrenia.⁵

References

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2. Xia, M., Liu, Y., Figueroa, D.J., *et al.* Characterization and localization of a human serine racemase. *Brain Res. Mol. Brain Res.* **125**(1-2), 96-104 (2004).
3. Mothet, J.P., Parent, A.T., Wolosker, H., *et al.* D-Serine is an endogenous ligand for the glycine site of the N-methyl-D-aspartate receptor. *Proc. Natl. Acad. Sci. USA* **97**(9), 4926-4931 (2000).
4. Labrie, V., Fukumura, R., Rastogi, A., *et al.* Serine racemase is associated with schizophrenia susceptibility in humans and in a mouse model. *Hum. Mol. Genet.* **18**(17), 3227-3243 (2009).
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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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