

Product Data Sheet

Product Name: D-Serine-d3

Cat. No.: GC70212

Chemical Properties

Cas. No. 1414348-52-9

Formula $C_3H_4D_3NO_3$

M.Wt 108.11

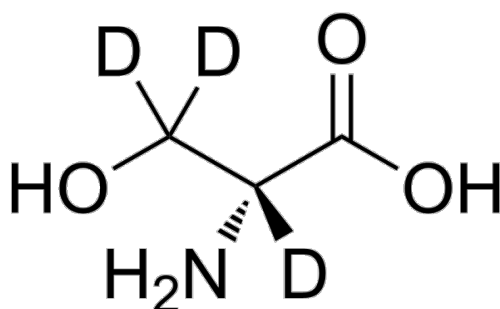
Solubility

Storage 4°C, sealed storage, away from moisture and light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

D-Serine-d3 ((R)-Serine-d3) is a deuterium labeled D-Serine. D-Serine ((R)-Serine), an endogenous amino acid involved in glia-synapse interactions that has unique neurotransmitter characteristics, is a potent co-agonist at the NMDA glutamate receptor. D-Serine has a cardinal modulatory role in major NMDAR-dependent processes including NMDAR-mediated neurotransmission, neurotoxicity,

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synaptic plasticity, and cell migration.

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs^[1].

References:

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019 Feb;53(2):211-246.
- [2]. Andrea R. Durrant, et al. D-Serine in Neuropsychiatric Disorders: New Advances.
- [3]. MacKay MB, et al. D-Serine: Potential Therapeutic Agent and/or Biomarker in Schizophrenia and Depression *Front Psychiatry*. 2019 Feb 6;10:25.
- [4]. Dai X, et al. D-Serine made by serine racemase in *Drosophila* intestine plays a physiological role in sleep. *Nat Commun*. 2019 May 7;10(1):1986.
- [5]. Suwandhi L, et al. Chronic d-serine supplementation impairs insulin secretion. *Mol Metab*. 2018 Oct;16:191-202.

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