

DL-Serine Assay Kit (Fluorometric)

Cat. No. Kit-0996 **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Description

Serine is one of the 20 naturally-occurring amino acids used by all organisms in the biosynthesis of proteins. Having a single chiral center, serine can exist as either of two stereoisomers (L-Serine and D-Serine). In addition to its role as a protein building block, L-Serine serves as a precursor to many vital biomolecules, including phosphatidylserine, sphingomyelin and the amino acids glycine and cysteine. The non-proteogenic isomer D-Serine is also synthesized from L-Serine in the mammalian brain. While most D-amino acids are only present in trace amounts in mammals, D-Serine is a vital neurotransmitter that acts as a co-agonist of synaptic N-methyl-D-aspartate (NMDA) type glutamate-gated ion channels. Impaired D-Serine metabolism may contribute to several neuropsychiatric disorders, including depression, schizophrenia, epilepsy and dementia. DL-Serine Assay Kit allows for quantification of both L- and D-Serine in biological fluids and tissues. The assay is based on the conversion of L-Serine to D-Serine, which is metabolized to an intermediate product that is subsequently oxidized and reacts with a probe to form a stable fluorophore (Ex/Em = 539/587 nm). Samples may be divided and assayed simultaneously for quantification of both D-Serine and total DL-Serine. The assay is not affected by physiological concentrations of other amino acids, is high-throughput adaptable and can detect less than 1 μ M Serine.

Applications

Estimation of Serine in various biological samples

Storage

-20°C

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Shipping	Gel Pack
Size	100 assays
Kit Components	Serine Assay Buffer; Probe Solution; Serine Racemase Enzyme Mix; D-Serine Enzyme Mix; Developer Enzyme Mix; Sample Cleanup Mix; D-Serine Standard
Target Species	Mammalian
Detection method	Fluorescence (Ex/Em 535/587 nm)
Features & Benefits	Simple, rapid & convenient assay; Limit of detection: 1 μ M; Very specific, does not interact with other standard and non-standard amino acids

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