

# Serine racemase (H-150): sc-48741

## BACKGROUND

Known to be prominent in bacteria, D amino acids were generally thought to be absent in mammals. D-serine has since been found in high levels in the mammalian brain and in various mammalian fluids. D-serine activates N-methyl-D-aspartate (NMDA) receptors—molecules with important roles in learning, brain growth and brain cell death. Serine racemase is the enzyme catalyzing the formation of D-serine from L-serine. Serine racemase is a member of the family of pyridoxal-5' phosphate-dependent enzymes and is localized to glial cells in rat brain.

## REFERENCES

1. Hashimoto, A., et al. 1993. Free D-serine, D-aspartate and D-alanine in central nervous system and serum in mutant mice lacking D-amino acid oxidase. *Neurosci. Lett.* 152: 33-36.
2. Kumashiro, S., et al. 1995. Free D-serine in post-mortem brains and spinal cords of individuals with and without neuropsychiatric diseases. *Brain Res.* 681: 117-125.
3. Schell, M.J., et al. 1995. D-serine, an endogenous synaptic modulator: localization to astrocytes and glutamate-stimulated release. *Proc. Natl. Acad. Sci. USA* 92: 3948-3952.

## CHROMOSOMAL LOCATION

Genetic locus: SRR (human) mapping to 17p13.3; Srr (mouse) mapping to 11 B5.

## SOURCE

Serine racemase (H-150) is a rabbit polyclonal antibody raised against amino acids 191-340 mapping at the C-terminus of Serine racemase of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Serine racemase (H-150) is recommended for detection of Serine racemase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Serine racemase siRNA (h): sc-42221, Serine racemase siRNA (m): sc-42222, Serine racemase shRNA Plasmid (h): sc-42221-SH, Serine racemase shRNA Plasmid (m): sc-42222-SH, Serine racemase shRNA (h) Lentiviral Particles: sc-42221-V and Serine racemase shRNA (m) Lentiviral Particles: sc-42222-V.

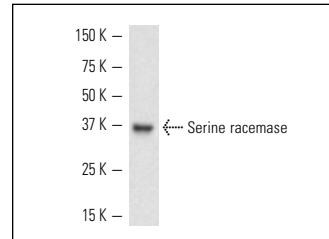
Molecular Weight of Serine racemase: 37 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

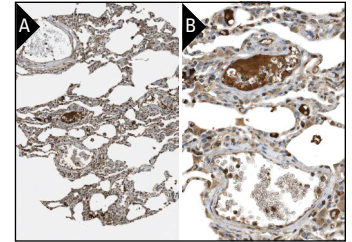
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



Serine racemase (H-150): sc-48741. Western blot analysis of Serine racemase expression in mouse brain tissue extract.



Serine racemase (H-150): sc-48741. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing nuclear and cytoplasmic staining of alveolar cells and macrophages at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

## SELECT PRODUCT CITATIONS

1. Turpin, F.R., et al. 2011. Reduced serine racemase expression contributes to age-related deficits in hippocampal cognitive function. *Neurobiol. Aging* 32: 1495-1504.
2. Lu, M., et al. 2011. Potentiation of D-serine involves degeneration of dopaminergic neurons in MPTP/p mouse model of Parkinson's disease. *CNS Neurosci. Ther.* 17: 796-798.
3. Singh, N.S., et al. 2012. Capillary electrophoresis-laser-induced fluorescence (CE-LIF) assay for measurement of intracellular D-serine and serine racemase activity. *Anal. Biochem.* 421: 460-466.
4. Wang, Y.F., et al. 2013. Hyposmolality differentially and spatiotemporally modulates levels of glutamine synthetase and serine racemase in rat supraoptic nucleus. *Glia.* 61: 529-538.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.


 MONOS  
Satisfaction  
Guaranteed

Try **Serine racemase (A-4): sc-365217**, our highly recommended monoclonal alternative to Serine racemase (H-150).