Technical Data Sheet

Purified Mouse Anti-Serine Racemase

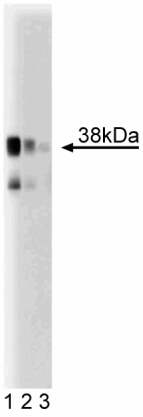
Product Information

Material Number:	**612052**
Size:	50 µg
Concentration:	250 µg/ml
Clone:	29/Serine Racemase
Immunogen:	Mouse serine racemase aa. 127-248
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Mouse Tested in Development: Rat
Target MW:	38 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

The majority of synapses in the central nervous system utilize glutamate as a neurotransmitter to produce rapid neuronal excitation. Glutamate has a diverse array of receptors that can be categorized into two groups: ionotropic and metabotropic. The ionotropic receptors are subdivided into two distinct types: 1) receptors for N-methyl D-aspartate (NMDAR) and 2) non-NMDA receptors for AMPA and kainate. NMDA receptors require coactivation at both glutamate and glycine sites. D-serine is a D-amino acid found in mammalian tissues that can act as a potent ligand for the glycine site on NMDA receptors. D-serine is made by the enzyme serine racemase, which is a member of the pyridoxal-5' phosphate (PLP)-dependent enzyme family. Serine racemase mRNA is expressed in brain and liver, and serine racemase protein is expressed in glial cells. Degradation of D-serine by D-amino acid oxidase attenuates NMDA receptor-mediated calcium influx, and implicates D-serine as an endogenouse modulator of NMDA receptor function. Thus, glial cell production of D-serine via serine racemase activity may be an important system for modulation of synaptic transmission.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



Western blot analysis of serine racemase on a mouse cerebrum lysate. *Lane 1: 1:500, lane 2: 1:1000, lane 3: 1:2000 dilution of the anti- serine racemase antibody.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at -20° C.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Not Recommended

Suggested Companion Products

Catalog Number	Name	Size	Clone
611455	Mouse Cerebrum Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Igs	1.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Mothet JP, Parent AT, 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 U S A.* 2000; 97(9):4926-4931.(Biology)

Wolosker H, Blackshaw S, Snyder SH. Serine racemase: a glial enzyme synthesizing D-serine to regulate glutamate-N-methyl-D-aspartate neurotransmission. *Proc Natl Acad Sci U S A.* 1999; 96(23):13409-13414.(Biology)