D-Serine Antibody – Rabbit Polyclonal

Ref: IS1004

The anti-D-Serine antibody IS1004 was validated for immunofluorescence in mouse brain tissues, in combination with the STAINperfect immunostaining kit A. Following the same staining procedure, this rabbit polyclonal antibody can be used to visualize D-Serine in whole mounts, cell cultures, and tissue sections (IF or IHC).

Clonality	Polyclonal antibody
Host	Rabbit
Reactivity	Reacts with all species
Eligible samples	Whole mounts, cell culture, tissue sections
Staining procedure	STAINperfect immunostaining kit A
Format	50µL (approx. 40 tissue sections)

INFORMATIONS

Product overview

Product name	D-Serine antibody – Rabbit pAb
Synonyms	Anti-D-Serine antibody Anti (R)-Serine antibody
Immunogen	Conjugated D-Serine
Specificity	When tested in competitive ELISA, the anti-conjugated D-Serine antibody did not show any significant cross reactivity with D-Serine analogs, including L-Serine and D-Threonine

Storage

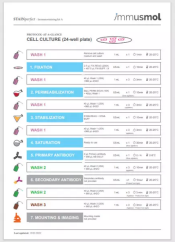
Form	Liquid
Purity	Purified anti-serum
Storage buffer	Store at +4°C for short term (1-2 months). Aliquot and store at -20°C for long term. Avoid repeated freeze / thaw cycles
Material safety datasheet	Download MSDS

PROTOCOLS

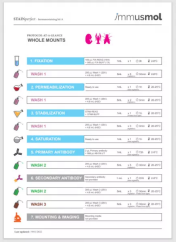
IF – Cell cultures, Whole mounts, Tissue sections	Dilute antibody with the antibody diluent provided in the STAINperfect immunostaining kit A. Use at 1/250 -1/1000 dilution. Follow the STAINperfect protocol suited to your sample
Comments	Optimal working dilutions must be determined by the end-user
Restrictions	For research use only
Full protocol	Download STAINperfect protocol for D-Serine staining

Protocols-at-a-glance

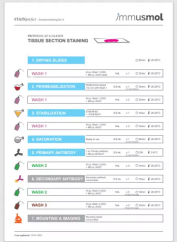
Complete Instructions for Use



Protocol-at-a-glance for cell cultures



Protocol-at-a-glance for whole mounts



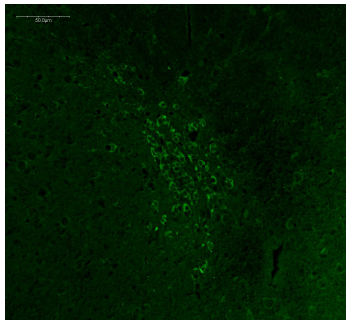
Protocol-at-a-glance for tissue sections

REFERENCES

Selected publications on D-Serine:

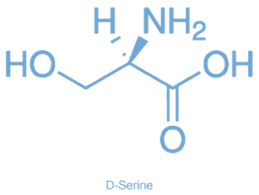
- Paul P, de Belleroche J. The role of D-serine and glycine as co-agonists of NMDA receptors in motor neuron degeneration and amyotrophic lateral sclerosis (ALS). Front Synaptic Neurosci. 2014 Apr 16;6:10.
- Balu DT et al. D-serine and serine racemase are localized to neurons in the adult mouse and human forebrain. Cell Mol Neurobiol. 2014 Apr;34(3):419-35. doi: 10.1007/s10571-014-0027-z. Epub 2014 Jan 17.
- Klatte K et al. Impaired D-serine-mediated cotransmission mediates cognitive dysfunction in epilepsy. J Neurosci. 2013 Aug 7;33(32):13066-80.
- Otte DM et al. Effects of Chronic D-Serine Elevation on Animal Models of Depression and Anxiety-Related Behavior. PLoS One. 2013 Jun 21;8(6):e67131.
- Martineau M et al. Storage and uptake of D-serine into astrocytic synaptic-like vesicles specify gliotransmission. J Neurosci. 2013 Feb 20;33(8):3413-23. doi: 10.1523/JNEUROSCI.3497-12.2013.
- Van Horn MR, Sild M, Ruthazer ES. D-serine as a gliotransmitter and its roles in brain development and disease. Front Cell Neurosci. 2013 Apr 23;7:39. doi: 10.3389/fncel.2013.00039.

Product pictures



D-Serine imaging in adult mouse frontal cortex

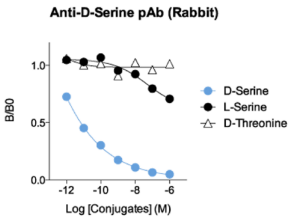
Using STAINperfect immunostaining kit A and following protocol developped for tissu sections, the anti-D-Serine rabbit polyclonal antibody (Ref: IS1004) revealed the presence of D-Serine postive cells within mouse frontal cortex with a cytoplasmic pattern. The staining was revealed using Alexa Fluor® 488-conjugated secondary antibody and image obtained using confocal imaging.



D-Serine

D-Serine

Synthesized from L-Serine in the mammalian brain by the serine racemase enzyme, D-Serine is mainly expressed in the forebrain. Known as a potent co-agonist of the NMDA receptor, D-serine acts both as a gliotransmitter and neurotransmitter, playing a key role in cognition, memory, as well as in the regulation of mood. Elevated levels of D-Serine were recently found in the spinal cord of ALS models and patients, suggesting that the metabolite contributes to motor neuron degeneration. D-Serine production was also observed in peripheral organs, independently of SR expression.



Affinity & specificity of anti-D-Serine antibody

Competitive ELISA demonstrates that low amount of D-Serine conjugate is required to abolish antigen recognition by the antibody (high affinity), while rising concentrations of L-Serine or D-Threonine conjugates do not affect this reaction (high specificity).

Contact information

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To order, review, ask for technical support, visit product page at:

https://www.immusmol.com/shop/d-serine-pab/