

# L-Serine Antibody – Rabbit Polyclonal

Ref: IS1003

The rabbit polyclonal antibody IS1003 is directed against conjugated L-Serine. In combination with the [STAINperfect immunostaining kit A](#), this anti-L Serine antibody was used to visualize L-serine (immunofluorescence) in mouse primary neurons & brain stem tissues, and crayfish CNS tissues.

<b>Clonality</b>	Polyclonal antibody
<b>Host</b>	Rabbit
<b>Reactivity</b>	Reacts with all species
<b>Tested samples</b>	Whole mounts, cell culture, tissue sections
<b>Staining procedure</b>	<a href="#">STAINperfect immunostaining kit A</a>
<b>Format</b>	50µL (approx. 40 tissue sections)

## INFORMATIONS

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### Product overview

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<b>Product name</b>	L-Serine antibody – Rabbit pAb
<b>Synonyms</b>	Anti-L-Serine acid antibody Anti-(S)-2-amino-3-hydroxypropionic acid antibody
<b>Immunogen</b>	Conjugated L-Serine
<b>Specificity</b>	When tested in competitive ELISA, the anti-conjugated L-Serine antibody did not show any significant cross reactivity with L-Serine analogs, including D-Serine and L-Threonine conjugates

### Storage

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

# PROTOCOLS

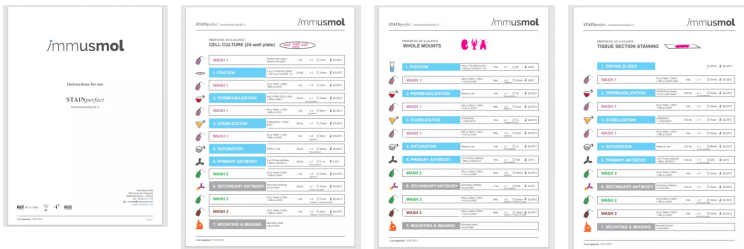
**IF - Cell cultures, Whole mounts, Tissue sections** Dilute antibody with the antibody diluent provided in the [STAINperfect immunostaining kit A](#). Use at 1/250 -1/1000 dilution. Follow the STAINperfect protocol suited to your sample

**Comments** Optimal working dilutions must be determined by the end-user

**Restrictions** For research use only

**Full protocol** [Download STAINperfect protocol for L-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](#)

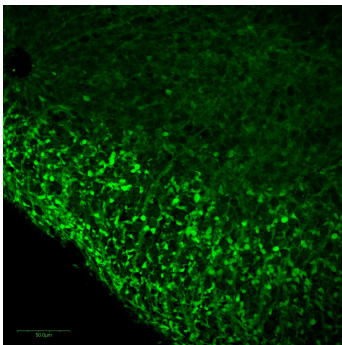
## REFERENCES

Antibody not yet cited. Submit an article and [get a 10% discount](#).

### Selected publications about L-Serine:

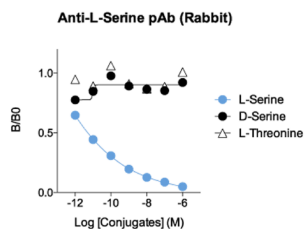
- [Pollari S et al. Enhanced serine production by bone metastatic breast cancer cells stimulates osteoclastogenesis. Breast Cancer Res Treat. 2011 Jan;125\(2\):421-30. doi: 10.1007/s10549-010-0848-5. Epub 2010 Mar 30.](#)
- [Yang JH et al. Brain-specific Phgdh deletion reveals a pivotal role for L-serine biosynthesis in controlling the level of D-serine, an N-methyl-D-aspartate receptor co-agonist, in adult brain. J Biol Chem. 2010 Dec 31;285\(53\):41380-90. doi: 10.1074/jbc.M110.187443. Epub 2010 Oct 21.](#)
- [Tabatabaie L, Klomp LW, Berger R, de Koning TJ. L-serine synthesis in the central nervous system: a review on serine deficiency disorders. Mol Genet Metab. 2010 Mar;99\(3\):256-62. doi: 10.1016/j.ymgme.2009.10.012. Epub 2009 Oct 25.](#)

## Product pictures



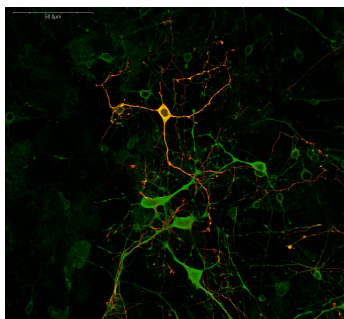
### L-Serine immunostaining of mouse brainstem (E13.5)

Mouse brainstem (E13.5) immunostaining of soma of L-Serine cells after whole mount processing using STAINPerfect immunostaining kit A. Secondary antibody (goat anti-rabbit Alexa Fluor® 488) was used and picture was acquired by confocal imaging.



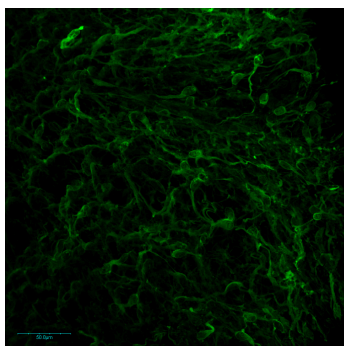
### Affinity & specificity of anti-L-Serine antibody

Competitive ELISA demonstrates that low amounts of L-Serine conjugate are required to abolish antigen-antibody reaction (high affinity), while rising concentrations of D-Serine and L-Threonine conjugates do not affect reaction (high specificity).



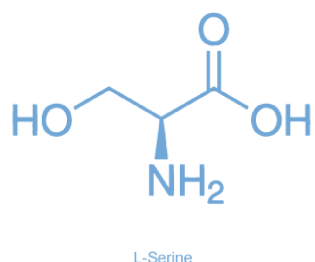
### Staining of L-Serine and GABA positive neurons in mouse primary cortical culture

Primary mouse cortical neurons were stained using anti-L-Serine (green) polyclonal rabbit antibody (IS1003) and anti-GABA (red) chicken polyclonal antibody (IS1036) using the STAINperfect immunostaining kit A and according to the protocol for cell culture. Fluorescent conjugated secondary antibodies were used and picture obtained by confocal imaging. Co-immunostaining appears in yellow.



### Immunofluorescence imaging of L-Serine in mouse brainstem

Mouse brainstem (E13.5) immunostaining of soma and fibers of L-Serine cells after whole mount processing using STAINPerfect immunostaining kit A. Alexa Fluor® 488 conjugated secondary antibody was used and picture was obtained by confocal imaging at high magnification.



### L-Serine

L-Serine is a non-essential amino acid, which can be derived from dietary intake, from the glycolytic intermediate 3-phospho-glycerate, from glycine or by protein and phospholipid degradation. Serving in key metabolic pathways, including gluconeogenesis, cystathionine formation, glutathione synthesis and phospholipid synthesis, L-Serine plays a central role in cell proliferation. In the CNS, L-Serine is predominantly synthesized in astrocytes. Either converted into its enantiomer D-Serine or into glycine, L-Serine contributes to the regulation of NMDA receptor activity. Abnormal L-Serine synthesis has been found to be associated with psychiatric disorders and severe neurological disfunctions.

## Contact information

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

<https://www.immusmol.com/shop/l-serine-pab/>