L-Glutamate rabbit pAb – IS1001

Ref: IS1001-sp

The anti-L-Glutamate antibody IS1001 is a rabbit polyclonal antibody optimized to ensure superior affinity and specificity. Combined with the STAINperfect immunostaining kit A, the antibody allows direct L-Glutamic acid visualization in cell cultures, whole mounts and tissue sections.

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

INFORMATIONS

Product overview

Product name	L-Glutamate antibody – Rabbit polyclonal Ab
Synonyms	Anti-L-Glutamic acid antibody
Immunogen	Conjugated L-Glutamate
Specificity	When tested in competitive ELISA, the anti-conjugated L-Glutamate antibody did not show any significant cross reactivity with L-Glutamic acid analogs, including D-Glutamate, L-Glutamine and L-Aspartate conjugates
Volume	50µL

Storage

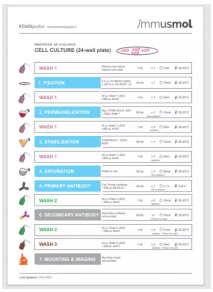
Form	Liquid
Purity	Purified anti-serum
Storage	Store at +4°C for short term (1-2 months). Aliquot and store at -20°C for long term. Avoid repeated freeze / thaw cycles
Material safety datasheet	Download MSDS

PROTOCOLS

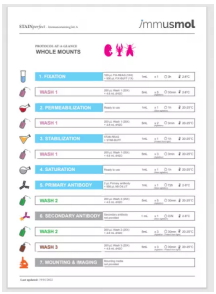
IF – Cell cultures, Whole mounts, Tissue sections	Dilute antibody with the antibody diluent provided in the STAINperfect immunostaining kit A. Use at 1/250 -1/1000 dilution. Follow the STAINperfect protocol suited to your sample
Comments	Optimal working dilutions must be determined by the end-user
Restrictions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

Protocols-at-a-glance

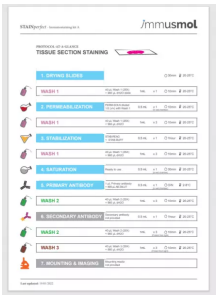
Complete Instructions for Use



Protocol-at-a-glance for cell cultures



Protocol-at-a-glance for whole mounts



Protocol-at-a-glance for tissue sections

Enregistrer

Enregistrer

REFERENCES

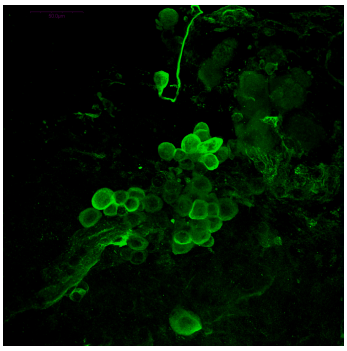
Product citations:

- Smits et al., Single-cell transcriptomics reveals multiple neuronal cell types in human midbrain-specific organoids. bioRxiv. 2019, March 28.
- Yokoi et al. Impact of Sleep–Wake-Associated Neuromodulators and Repetitive Low-Frequency Stimulation on Human iPSC-Derived Neurons Front Neurosci.2019 May 29.
- Traub et al. hiPS Cell-Derived Neurons for High-Throughput Screening. Methods Mol Biol. 2019;1994:243-263

Selected articles about L-Glutamate:

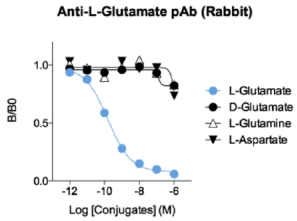
- Okubo Y et al. Imaging extrasynaptic glutamate dynamics in the brain. Proc Natl Acad Sci U S A. 2010 Apr 6;107(14):6526-31.
- Meldrum BS. Glutamate as a neurotransmitter in the brain: review of physiology and pathology. J Nutr. 2000 Apr;130(4S Suppl):1007S-15S.
- Hynd MR, Scott HL, Dodd PR. Glutamate-mediated excitotoxicity and neurodegeneration in Alzheimer's disease. Neurochem Int. 2004 Oct;45(5):583-95.

Product pictures



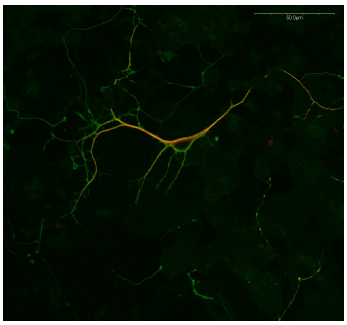
Immunostaining of glutamatergic cells in the crayfish brain.

Anti-L-Glutamate antibody highlights the presence of glutamatergic cells into the brain of a crayfish. Staining was obtained with anti-L-Glutamate antibody and performed with STAINperfect immunostaining kit A, following the protocol for whole mounts samples. Alexa Fluor® 488 conjugated secondary antibody was used and images obtained by confocal imaging at high magnification.



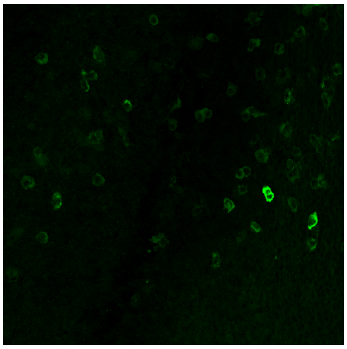
Affinity & specificity of anti-L-Glutamate antibody

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



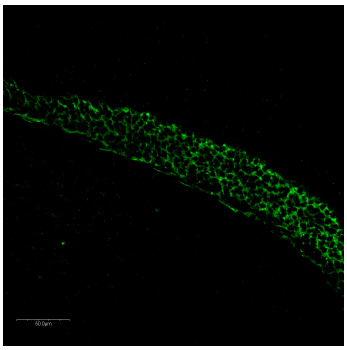
L-Glutamate (green) and MAP2 (red) immunostaining of mouse cortical primary neurons culture

Immunodetection of L-Glutamate (green) and MAP2- (red) positive neurons in mouse primary cortical culture. Staining was performed using STAINperfect immunostaining kit A, according to the protocol optimized for cell culture. After addition of a fluorescent labeled secondary antibody this staining reveals the presence of L-Glutamate within fibers and soma of neurons.



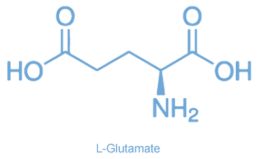
Low magnification of embryonic (E15.5) medulla immunostaining of glutamatergic cells.

Glutamatergic cells into the hindbrain of mouse embryo (E15.5) were labeled with antibodies to L-Glutamate using STAINperfect immunostaining kit A and the protocol for whole mounts. Goat anti-rabbit Alexa Fluor® 488 secondary antibody was used and picture was acquired by confocal imaging.



Glutamatergic cells in brain stem of mouse embryo (E13.5).

Immunostaining of L-Glutamate cells in the brain stem of E13.5 mouse embryon following whole mount protocol provided with STAINperfect immunostaining kit A.Our optimized L-Glutamate rabbit antibody allowed L-Glutamate detection with a cytoplasmic pattern. Secondary antibody (Alexa Fluor® 488 conjugated) was used and staining visualized by confocal imaging.



L-Glutamic acid (L-Glutamate)

Amino acid L-Glutamic acid (L-Glutamate) is the major excitatory neurotransmitter in the vertebrate nervous system. Agonist of NMDA, AMPA, Kainate and metabotropic receptors, L-Glutamic acid regulates synaptic plasticity, and is thus involved in learning and mnemonic processes. However, by activating NMDA receptors, L-Glutamic acid may also lead to neuronal damage and death. Glutamate toxicity is thus associated with the pathogenesis of neurodevelopmental and neurodegenerative disorders.

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

https://www.immusmol.com/shop/l-glutamate-polyclonal-antibody-bundle/