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Product Information

Anti-SLC1A1
produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200518**

Product Description

Anti-SLC1A1 is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence near the C-terminus of human SLC1A1 (GeneID: 6505), conjugated to KLH. The corresponding sequence is identical in mouse and rat SLC1A1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-SLC1A1 specifically recognizes human and mouse SLC1A1. The antibody may be used in various immunochemical techniques including immunoblotting (~70 kDa) and immunohistochemistry. Detection of the SLC1A1 band by immunoblotting is specifically inhibited by the SLC1A1 immunizing peptide.

Glutamate, the major excitatory amino acid (EAA) in the CNS, is removed from the synaptic cleft by high affinity amino acid transporters located on neurons and astrocytes, preventing its accumulation that could lead to loss of synaptic transmission and neurodegeneration. The EAA transporters (EAATs) include five subtypes of glutamate transporters EAAT1-EAAT5 that are members of the solute carrier family 1 (SLC1). SLC1A1 (also known as EAAC1, EAAT3) is localized at the postsynaptic site of neurons, whereas GLAST/EAAT1 and GLT1/EAAT2 are expressed in excitatory synapses by surrounding astrocytes. SLC1A1/EAAC1 is expressed at moderate levels in the adult brain, mainly in the hippocampus, basal ganglia and olfactory bulb, and is considered to make a minor contribution to glutamate removal from the synapse.[1-3] In contrast, its early expression during brain development, suggests a role for SLC1A1 in the developmental effects of glutamate. SLC1A1/EAAC1 is highly regulated by neural activity as well as by intracellular signaling pathways involving mainly PKCα, PI3K, and glial factors, resulting in rapid changes in the trafficking of the transporter and in its membrane location.[4,5] In vivo, long term potentiation or contextual fear conditioning have been reported to increase the amount of EAAC1 at the plasma membrane.[6]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1.5-3.0 µg/mL is recommended using Neuro-2a cell extracts.

Immunohistochemistry: a working concentration of 10-20 µg/mL is recommended using formalin-fixed paraffin-embedded human small intestine.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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4. Baik, H.J., et al., *Int. J. Neurosci.*, **119**, 1419-1428 (2009).
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6. Levenson, J., et al., *Nat. Neurosci.*, **5**, 155-161 (2002).

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