

EAAT 2 extracellular domain

Cat.No. 250-2P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. Control peptides should also be stored at -20°C when still lyophilized!
Immunogen	Synthetic peptide corresponding to AA 146 to 161 from mouse EAAT2 (UniProt Id: P43006)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	250 203, 250 204
Remarks	This control peptide consists of the synthetic peptide (aa 146 - 161 of mouse EAAT 2) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

**TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS**

Glutamate is the major excitatory neurotransmitter in the mammalian central nervous system. After the release of glutamate from synaptic vesicles into the synaptic cleft during neurotransmission, **excitatory amino acid transporters (EAATs)** remove extracellular glutamate to avoid excitotoxic levels. Five EAATs with differential expression patterns have been described so far: **EAAT 1**, also referred to as **GLAST** and **SLC1A3**, has neuroprotective potential following ischemia and is expressed by reactive astrocytes and activated microglia. **EAAT 2 (GLT-1, SLC1A2)** is the most abundant and primarily expressed in astrocytes. **EAAT 3 / SLC1A1** is expressed in neurons and has also been shown to be involved in the uptake of extracellular cysteine. EAAT 4 shows weak expression in the forebrain and high levels in Purkinje cells of the cerebellum. EAAT 5 has only been described for humans and is primarily expressed in the retina.

Selected General References

Specificity controls for immunocytochemistry: the antigen preadsorption test can lead to inaccurate assessment of antibody specificity.
Holmseth S, Zhou Y, Follin-Arbelet VV, Lehre KP, Bergles DE, Danbolt NC
The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society (2012) 60(3): 174-87.

Reactive astrocytes and activated microglial cells express EAAT1, but not EAAT2, reflecting a neuroprotective potential following ischaemia.
Beschorner R, Simon P, Schauer N, Mittelbronn M, Schluener HJ, Trautmann K, Dietz K, Meyermann R
Histopathology (2007) 50(7): 897-910.

Expression of EAAT1 reflects a possible neuroprotective function of reactive astrocytes and activated microglia following human traumatic brain injury.
Beschorner R, Dietz K, Schauer N, Mittelbronn M, Schluener HJ, Trautmann K, Meyermann R, Simon P
Histology and histopathology (2007) 22(5): 515-26.

Binding and transport of [³H](2S,4R)-4-methylglutamate, a new ligand for glutamate transporters, demonstrate labeling of EAAT1 in cultured murine astrocytes.
Apricò K, Beart PM, Crawford D, O'Shea RD
Journal of neuroscience research (2004) 75(6): 751-9.

Motor coordination and increased susceptibility to cerebellar injury in GLAST mutant mice.
Watase K, Hashimoto K, Kano M, Yamada K, Watanabe M, Inoue Y, Okuyama S, Sakagawa T, Ogawa S, Kawashima N, Hori S, et al.
The European journal of neuroscience (1998) 10(3): 976-88.

Identification of functional domains of the human glutamate transporters EAAT1 and EAAT2.
Mitrovic AD, Amara SG, Johnston GA, Vandenberg RJ
The Journal of biological chemistry (1998) 273(24): 14698-706.

Epilepsy and exacerbation of brain injury in mice lacking the glutamate transporter GLT-1.
Tanaka K, Watase K, Manabe T, Yamada K, Watanabe M, Takahashi K, Iwama H, Nishikawa T, Ichihara N, Kikuchi T, Okuyama S, et al.
Science (New York, N.Y.) (1997) 276(5319): 1699-702.

The mouse and human excitatory amino acid transporter gene (EAAT1) maps to mouse chromosome 15 and a region of syntenic homology on human chromosome 5.
Kirschner MA, Arriza JL, Copeland NG, Gilbert DJ, Jenkins NA, Magenis E, Amara SG
Genomics (1994) 22(3): 631-3.

High-affinity glutamate transporter GLAST/EAAT1 regulates cell surface expression of glutamine/neutral amino acid transporter ASCT2 in human fetal astrocytes.
Gegelashvili M, Rodriguez-Kern A, Pirozhkova I, Zhang J, Sung L, Gegelashvili G
Neurochemistry international () 48(6-7): 611-5.