

EAAT2 (20): sc-135892

BACKGROUND

Excitatory amino acid transporter 1 (EAAT1) is one of the two glial glutamate transporters that clear the extracellular glutamate generated during neuronal signal transmission. Excitatory amino acid transporters (EAATs) are membrane-bound proteins that are localized in glial cells and pre-synaptic glutamatergic nerve endings. EAATs transport the excitatory neurotransmitters L-glutamate and D-aspartate, a process that is essential for terminating the postsynaptic action of glutamate. The re-uptake of amino acid neurotransmitters by EAAT proteins has been shown to protect neurons from excitotoxicity, which is caused by the accumulation of amino acid neurotransmitters. Three glutamate transporters have been identified in human brain, designated EAAT1-3. EAAT1 and EAAT3 are also expressed in various non-nervous tissues, while EAAT2 expression appears to be restricted to the brain. Surface expression of the glial glutamate transporter EAAT1 is stimulated by Insulin-like growth factor 1 through activation of phosphatidylinositol-3-kinase.

REFERENCES

1. Arriza, J.L., et al. 1994. Functional comparisons of three glutamate transporter subtypes cloned from human motor cortex. *J. Neurosci.* 14: 5559-5569.
2. Kirschner, M.A., et al. 1994. Mouse excitatory amino acid transporter EAAT2: isolation, characterization, and proximity to neuroexcitability loci on mouse chromosome 2. *Genomics* 24: 218-224.
3. Ikeda, J., et al. 1996. Nuclear disintegration as a leading step of glutamate excitotoxicity in brain neurons. *J. Neurosci. Res.* 43: 613-622.
4. Stoffel, W., et al. 1996. Human high affinity, Na⁺-dependent L-glutamate/L-aspartate transporter GLAST-1 (EAAT1): gene structure and localization to chromosome 5p11-p12. *FEBS Lett.* 386: 189-193.
5. Sutherland, M.L., et al. 1996. Glutamate transporter mRNA expression in proliferative zones of the developing and adult murine CNS. *J. Neurosci.* 16: 2191-2207.
6. Rauen, T., et al. 1998. High-affinity glutamate transporters in the rat retina: a major role of the glial glutamate transporter GLAST-1 in transmitter clearance. *Cell Tissue Res.* 291: 19-31.
7. Scott, H.L., et al. 2002. Aberrant expression of the glutamate transporter excitatory amino acid transporter 1 (EAAT1) in Alzheimer's disease. *J. Neurosci.* 22: RC206.
8. Boehmer, C., et al. 2003. Regulation of the glutamate transporter EAAT1 by the ubiquitin ligase NEDD4-2 and the serum and glucocorticoid-inducible kinase isoforms SGK1/3 and protein kinase B. *J. Neurochem.* 86: 1181-1188.

CHROMOSOMAL LOCATION

Genetic locus: SLC1A2 (human) mapping to 11p13; Slc1a2 (mouse) mapping to 2 E2.

SOURCE

EAAT2 (20) is a mouse monoclonal antibody raised against amino acids 562-574 of EAAT2 of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

APPLICATIONS

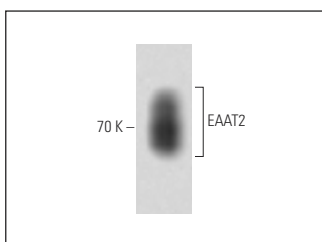
EAAT2 (20) is recommended for detection of EAAT2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for EAAT2 siRNA (h): sc-35255, EAAT2 siRNA (m): sc-35256, EAAT2 siRNA (r): sc-270106, EAAT2 shRNA Plasmid (h): sc-35255-SH, EAAT2 shRNA Plasmid (m): sc-35256-SH, EAAT2 shRNA Plasmid (r): sc-270106-SH, EAAT2 shRNA (h) Lentiviral Particles: sc-35255-V, EAAT2 shRNA (m) Lentiviral Particles: sc-35256-V and EAAT2 shRNA (r) Lentiviral Particles: sc-270106-V.

Molecular Weight of EAAT2: 70 kDa.

Positive Controls: rat cerebellum extract: sc-2398, rat brain extract: sc-2392 or HeLa whole cell lysate: sc-2200.

DATA



EAAT2 (20): sc-135892. Western blot analysis of EAAT2 expression in rat cerebrum tissue extract.

SELECT PRODUCT CITATIONS

1. Krzyżanowska, W., et al. 2017. Ceftriaxone- and N-acetylcysteine-induced brain tolerance to ischemia: influence on glutamate levels in focal cerebral ischemia. *PLoS ONE* 12: e0186243.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.



See **EAAT2 (E-1): sc-365634** for EAAT2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.