

EAAT1 (N-19): sc-7758

BACKGROUND

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 reuptake 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.

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. 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.
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 Letts.* 386: 189-193.
5. Ikeda, J., et al. 1996. Nuclear disintegration as a leading step of glutamate excitotoxicity in brain neurons. *J. Neurosci. Res.* 43: 613-622.
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.

CHROMOSOMAL LOCATION

Genetic locus: SLC1A3 (human) mapping to 5p13; Slc1a3 (mouse) mapping to 15 A1.

SOURCE

EAAT1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of EAAT1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7758 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

EAAT1 (N-19) is recommended for detection of EAAT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

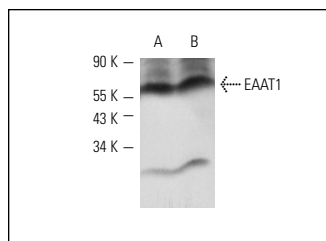
EAAT1 (N-19) is also recommended for detection of EAAT1 in additional species, including equine and porcine.

Suitable for use as control antibody for EAAT1 siRNA (h): sc-35253, EAAT1 siRNA (m): sc-35254, EAAT1 shRNA Plasmid (h): sc-35253-SH, EAAT1 shRNA Plasmid (m): sc-35254-SH, EAAT1 shRNA (h) Lentiviral Particles: sc-35253-V and EAAT1 shRNA (m) Lentiviral Particles: sc-35254-V.

Molecular Weight of EAAT1: 65 kDa.

Positive Controls: rat brain extract: sc-2392, rat cerebellum extract: sc-2398 or EAAT1 (1:50): sc-4509 WB.

DATA



EAAT1 (N-19): sc-7758. Western blot analysis of EAAT1 expression in rat whole brain (A) and cerebellum (B) extracts.

SELECT PRODUCT CITATIONS

1. Ralphe, J.C., et al. 2004. Correlation between myocardial malate/aspartate shuttle activity and EAAT1 protein expression in hyper- and hypothyroidism. *Am. J. Physiol. Heart Circ. Physiol.* 288: H2521-H2526.
2. Struzynska, L., et al. 2005. Changes in expression of neuronal and glial glutamate transporters in lead-exposed adult rat brain. *Neurochem. Int.* 47: 326-333.
3. Bauer, D., et al. 2008. Abnormal expression of glutamate transporter and transporter interacting molecules in prefrontal cortex in elderly patients with schizophrenia. *Schizophr. Res.* 104: 108-120.
4. Mitosek-Szewczyk, K., et al. 2008. Expression of glutamate transporters GLT-1 and GLAST in different regions of rat brain during the course of experimental autoimmune encephalomyelitis. *Neuroscience* 155: 45-52.

RESEARCH USE

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