

EAAT1 (C-19): sc-7757

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 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. Surface expression of the glial glutamate transporter EAAT1 is stimulated by Insulin-like growth factor 1 through activation of phosphatidylinositol-3-kinase.

CHROMOSOMAL LOCATION

Genetic locus: SLC1A3 (human) mapping to 5p13.2; Slc1a3 (mouse) mapping to 15 A1.

SOURCE

EAAT1 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-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-7757 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

EAAT1 (C-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), immunohistochemistry (including paraffin-embedded sections) (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 (C-19) is also recommended for detection of EAAT1 in additional species, including equine.

Suitable for use as control antibody for EAAT1 siRNA (h): sc-35253, EAAT1 siRNA (m): sc-35254, EAAT1 siRNA (r): sc-270105, EAAT1 shRNA Plasmid (h): sc-35253-SH, EAAT1 shRNA Plasmid (m): sc-35254-SH, EAAT1 shRNA Plasmid (r): sc-270105-SH, EAAT1 shRNA (h) Lentiviral Particles: sc-35253-V, EAAT1 shRNA (m) Lentiviral Particles: sc-35254-V and EAAT1 shRNA (r) Lentiviral Particles: sc-270105-V.

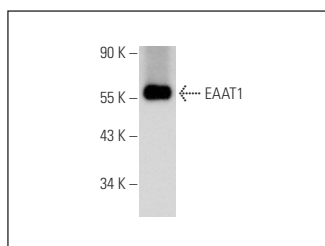
Molecular Weight of EAAT1: 65 kDa.

Positive Controls: rat brain extract: sc-2392, rat cerebellum extract: sc-2398 or rat pancreas extract: sc-364806.

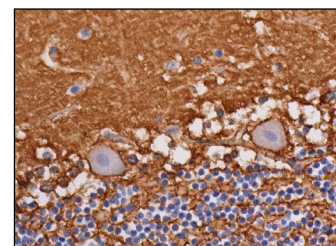
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



EAAT1 (C-19): sc-7757. Western blot analysis of EAAT1 expression in rat brain tissue extract.



EAAT1 Antibody (C-19): sc-7757. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing membrane staining of Purkinje cells and neuropil staining in granular and molecular layers.

SELECT PRODUCT CITATIONS

- Ueda, H. 2002. Caveolin-1 localization in Müller cells of the retina. *Acta Histochem. Cytochem.* 35: 423-428.
- Xu, N.J., et al. 2003. Morphine withdrawal increases glutamate uptake and surface expression of glutamate transporter GLT1 at hippocampal synapses. *J. Neurosci.* 23: 4775-4784.
- Korn, T., et al. 2005. Autoantigen specific T cells inhibit glutamate uptake in astrocytes by decreasing expression of astrocytic glutamate transporter GLAST: a mechanism mediated by tumor necrosis factor- α . *FASEB J.* 19: 1878-1880.
- Frizzo, M.E., et al. 2007. Extracellular adenosine triphosphate induces glutamate transporter-1 expression in hippocampus. *Hippocampus* 17: 305-315.
- Paoloni, M., et al. 2009. Canine tumor cross-species genomics uncovers targets linked to osteosarcoma progression. *BMC Genomics* 10: 625.

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.