SANTA CRUZ BIOTECHNOLOGY, INC.

EAAT2 (N-19): sc-7760

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

SOURCE

EAAT2 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of EAAT2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7760 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EAAT2 (N-19) 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), 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).

EAAT2 (N-19) is also recommended for detection of EAAT2 in additional species, including porcine.

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

Molecular Weight of EAAT2: 70 kDa.

Positive Controls: rat brain extract: sc-2392, HeLa whole cell lysate: sc-2200 or mouse brain extract: sc-2253.

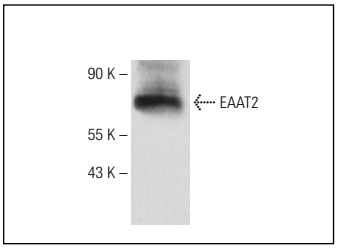
RESEARCH USE

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

STORAGE

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

DATA



EAAT2 (N-19): sc-7760. Western blot analysis of EAAT2 expression in rat brain extract.

SELECT PRODUCT CITATIONS

1. 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.
2. Wu, N., et al. 2008. Aquaporin 4 deficiency modulates morphine pharmacological actions. Neurosci. Lett. 448: 221-225.
3. 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.
4. Vanhoutte, N., et al. 2009. Enhanced expression of the high affinity glutamate transporter GLT-1 in C6 glioma cells delays tumour progression in rat. Exp. Neurol. 218: 56-63.
5. Carozzi, V.A., et al. 2011. Expression, distribution and glutamate uptake activity of high affinity-excitatory aminoacid transporters in *in vitro* cultures of embryonic rat dorsal root ganglia. Neuroscience 192: 275-284.
6. Gammelsaeter, R., et al. 2011. A role for glutamate transporters in the regulation of Insulin secretion. PLoS ONE 6: e22960.
7. Ionescu, I.A,, et al. 2012. Intranasally administered neuropeptide S (NPS) exerts anxiolytic effects following internalization into NPS receptor-expressing neurons. Neuropsychopharmacology 37: 1323-1337.
8. Lecointre, M., et al. 2014. The efficiency of glutamate uptake differs between neonatal and adult cortical microvascular endothelial cells. J. Cereb. Blood Flow Metab. 34: 764-767.
9. Fazzi, F., et al. 2014. TNFR1/phox interaction and TNFR1 mitochondrial translocation thwart silica-induced pulmonary fibrosis. J. Immunol. 192: 3837-3846.