

EAAT3 (H-70): sc-25658

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: SLC1A1 (human) mapping to 9p24.2; Slc1a1 (mouse) mapping to 19 C1.

SOURCE

EAAT3 (H-70) is a rabbit polyclonal antibody raised against amino acids 455-524 of EAAT3 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.

APPLICATIONS

EAAT3 (H-70) is recommended for detection of EAAT3 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).

EAAT3 (H-70) is also recommended for detection of EAAT3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for EAAT3 siRNA (h): sc-41940, EAAT3 siRNA (m): sc-41941, EAAT3 shRNA Plasmid (h): sc-41940-SH, EAAT3 shRNA Plasmid (m): sc-41941-SH, EAAT3 shRNA (h) Lentiviral Particles: sc-41940-V and EAAT3 shRNA (m) Lentiviral Particles: sc-41941-V.

Molecular Weight of EAAT3: 57 kDa.

Positive Controls: EAAT3 (h2): 293T Lysate: sc-173228.

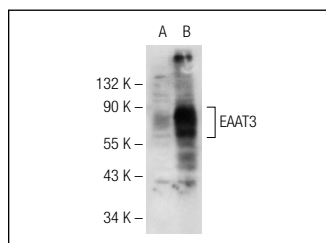
STORAGE

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

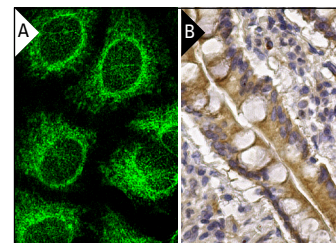
RESEARCH USE

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

DATA



EAAT3 (H-70): sc-25658. Western blot analysis of EAAT3 expression in non-transfected: sc-117752 (A) and human EAAT3 transfected: sc-173228 (B) 293T whole cell lysates.



EAAT3 (H-70): sc-25658. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Bianchi, M.G., et al. 2006. PKC-dependent stimulation of EAAT3 glutamate transporter does not require the integrity of Actin cytoskeleton. *Neurochem. Int.* 48: 341-349.
- Liang, J., et al. 2008. Excitatory amino acid transporter expression by astrocytes is neuroprotective against microglial excitotoxicity. *Brain Res.* 1210: 11-19.
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- DeSilva, T.M., et al. 2009. Regulation of glutamate transport in developing rat oligodendrocytes. *J. Neurosci.* 29: 7898-7908.
- Crema, L.M., et al. 2009. Effects of chronic restraint stress and Estradiol replacement on glutamate release and uptake in the spinal cord from ovariectomized female rats. *Neurochem. Res.* 34: 499-507.
- Bauer, D., et al. 2009. Abnormal glycosylation of EAAT1 and EAAT2 in prefrontal cortex of elderly patients with schizophrenia. *Schizophr. Res.* 117: 92-98.
- Xue, Y., et al. 2010. Metabolic acidosis in sheep alters expression of renal and skeletal muscle amino acid enzymes and transporters. *J. Anim. Sci.* 88: 707-717.
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- Bianchi, M.G., et al. 2012. Valproic acid induces the glutamate transporter excitatory amino acid transporter-3 in human oligodendrogloma cells. *Neuroscience*. 227: 260-270.