

# EAAT1 (H-50): sc-15316

## 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. 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 (H-50) is a rabbit polyclonal antibody raised against amino acids 1-50 mapping near 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.

## APPLICATIONS

EAAT1 (H-50) 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 (H-50) is also recommended for detection of EAAT1 in additional species, including equine, canine, bovine and porcine.

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: human cerebellum tissue extract, rat brain extract: sc-2392 or rat cerebellum extract: sc-2398.

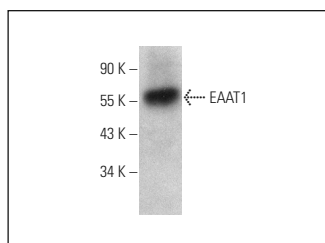
## STORAGE

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

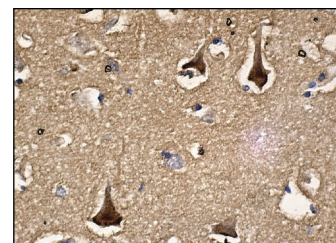
## RESEARCH USE

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

## DATA



EAAT1 (H-50): sc-15316. Western blot analysis of EAAT1 expression in human cerebellum tissue extract.



EAAT1 (H-50): sc-15316. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal cells and neuropil.

## SELECT PRODUCT CITATIONS

1. Vallejo-Illarramendi, A., et al. 2005. A novel alternative splicing form of excitatory amino acid transporter 1 is a negative regulator of glutamate uptake. *J. Neurochem.* 95: 341-348.
2. Varini, K., et al. 2012. Mislocalization of the excitatory amino-acid transporters (EAATs) in human astrocytoma and non-astrocytoma cancer cells: effect of the cell confluence. *J. Biomed. Sci.* 19: 10.
3. Feresten, A.H., et al. 2013. Increased expression of glial fibrillary acidic protein in prefrontal cortex in psychotic illness. *Schizophr. Res.* 150: 252-257.
4. 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.
5. Guitart, K., et al. 2015. Prion protein regulates glutathione metabolism and neural glutamate and cysteine uptake via excitatory amino acid transporter 3. *J. Neurochem.* 133: 558-571.
6. Nie, X., et al. 2015. 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin induces premature senescence of astrocytes via WNT/β-catenin signaling and Ros production. *J. Appl. Toxicol.* 35: 851-60.
7. Morioka, N., et al. 2015. Tumor necrosis factor-mediated downregulation of spinal astrocytic connexin43 leads to increased glutamatergic neurotransmission and neuropathic pain in mice. *Brain Behav. Immun.* 49: 293-310.
8. Yu, H.N., et al. 2015. Neuregulin 1 controls glutamate uptake by up-regulating excitatory amino acid carrier 1 (EAAC1). *J. Biol. Chem.* 290: 20233-20244.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.