

EAAT3 (C-20): sc-7761

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.

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 (EAAT-1): gene structure and localization to chromosome 5p11-p12. *FEBS Lett.* 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.

CHROMOSOMAL LOCATION

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

SOURCE

EAAT3 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus 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.

Blocking peptide available for competition studies, sc-7761 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

EAAT3 (C-20) 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), 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 (C-20) is also recommended for detection of EAAT3 in additional species, including equine, canine, bovine, porcine and avian.

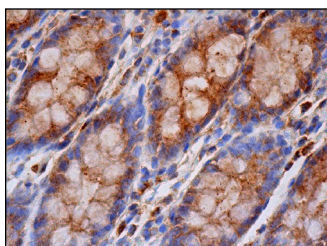
Suitable for use as control antibody for EAAT3 siRNA (h): sc-41940, EAAT3 siRNA (m): sc-41941, EAAT3 shRNA Plasmid (h): sc-41940-SH, EAAT3 shRNA Plasmid (m): sc-41941-SH, EAAT3 shRNA (h) Lentiviral Particles: sc-41940-V and EAAT3 shRNA (m) Lentiviral Particles: sc-41941-V.

Molecular Weight of EAAT3: 57 kDa.

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) 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



EAAT3 Antibody (C-20): sc-7761. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. 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.
2. 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.

RESEARCH USE

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