SANTA CRUZ BIOTECHNOLOGY, INC.

PROT (P-14): sc-138542

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The GAT1 gene family includes sodium- and chloride-dependent plasma membrane transporters for neurotransmitters, metabolites and osmolites, which couple substrate flux to transmembrane electrochemical gradients. PROT (Sodium-dependent proline transporter), also known as Solute carrier family 6 member 7, is a 636 amino acid multi-pass membrane protein that is a GAT1 family member specifically expressed in regions of the brain. PROT terminates the action of proline by its high affinity sodium/chloride-dependent reuptake into pre-synaptic terminals. Enriched in glutamatergic synaptic terminals, it is likely that PROT plays an important role in excitatory events of neurotransmission. PROT-mediated proline uptake is inhibited by compounds such as benztropine, LP-403812 and Des-Tyr-Leu-enkephalin (GGFL). These inhibitors of proline uptake may lead to the development of therapeutic agents for certain neurologic disorders.

REFERENCES

1. Shafqat, S., et al. 1995. Human brain-specific L-proline transporter: molecular cloning, functional expression, and chromosomal localization of the gene in human and mouse genomes. Mol. Pharmacol. 48: 219-229.
2. Fremeau, R.T., et al. 1996. A novel nonopioid action of enkephalins: competitive inhibition of the mammalian brain high affinity L-proline transporter. Mol. Pharmacol. 49: 1033-1041.
3. Galli, A., et al. 1999. L-proline and L-pipecolate induce enkephalin-sensitive currents in human embryonic kidney 293 cells transfected with the high-affinity mammalian brain L-proline transporter. J. Neurosci. 19: 6290-6297.
4. Jayanthi, L.D., et al. 2000. Differential regulation of mammalian brain-specific proline transporter by calcium and calcium-dependent protein kinases. Br. J. Pharmacol. 129: 465-470.
5. Igarashi, Y., et al. 2000. Molecular cloning and characterization of a cDNA encoding proline transporter in rice. Plant Cell Physiol. 41: 750-756.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606205. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: SLC6A7 (human) mapping to 5q32; Slc6a7 (mouse) mapping to 18 E1.

SOURCE

PROT (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of PROT 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-138542 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PROT (P-14) is recommended for detection of PROT 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).

PROT (P-14) is also recommended for detection of PROT in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PROT siRNA (h): sc-91812, PROT siRNA (m): sc-152483, PROT shRNA Plasmid (h): sc-91812-SH, PROT shRNA Plasmid (m): sc-152483-SH, PROT shRNA (h) Lentiviral Particles: sc-91812-V and PROT shRNA (m) Lentiviral Particles: sc-152483-V.

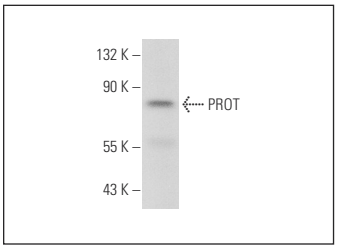
Molecular Weight of PROT: 68 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

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.

DATA



PROT (P-14): sc-138542. Western blot analysis of PROT expression in NIH/3T3 whole cell lysate.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.