SANTA CRUZ BIOTECHNOLOGY, INC.

BNPI (H-55): sc-28940

The Power to Question

BACKGROUND

The BNPI (brain specific Na^+-dependent inorganic phosphate(Pi) cotransporter) gene, also designated VGLUT1 (vesicular glutamate transporter), is located on chromosome 19q13.33 and encodes a 560 amino acid protein with 6-8 transmembrane-spanning domains. BNPI is expressed predominantly in neurons of the cerebral cortex, hippocampus, and cerebellum, and is more highly expressed in adult brain compared to fetal brain. BNPI localizes almost exclusively to nerve terminals forming asymmetric excitatory-type synapses and associates preferentially with the membranes of small synaptic vesicles. In the plasma membrane, BNP1 imports phospate ions, which are required for glutmatergic neurotransmission. Expression of BNPI results in glutamate uptake by intracellular vesicles, which defines a glutamatergic phenotype in neurons.

REFERENCES

1. Ni, B., et al. 1994. Cloning and expression of a CDNA encoding a brain-specific Na^+-dependent inorganic phosphate cotransporter. Proc. Natl. Acad. Sci. USA 91: 5607-5611.
2. Ni, B., et al. 1996. Molecular cloning, expression, and chromosomal localization of a human brain-specific Na^+-dependent inorganic phospate cotransporter. J. Neurochem. 66: 227-238.
3. Bellocchio, E.E., et al. 1998. The localization of the brain-specific inorganic phosphate transporter suggests a specific presynaptic role in glutamatergic transmission. J. Nuerosci. 18: 8648-8659.
4. Lee, R.Y., et al. 1999. EAT-4, a homolog of a mammalian sodium dependent inorganic phosphate cotransporter, is necessary for glutamatergic neurotransmission in caenorhabditis elegans. J. Neurosci. 19: 159-167.
5. Bellocchio, E.E., et al. 2000. Uptake of glutamate into synaptic vesicles by an inorganic phosphate transporter. Science 289: 957-960.

CHROMOSOMAL LOCATION

Genetic locus: SLC17A7 (human) mapping to 19q13.33; Slc17a7 (mouse) mapping to 7 B4.

SOURCE

BNPI (H-55) is a rabbit polyclonal antibody raised against amino acids 1-55 mapping at the N-terminus of BNPI 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.

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.

APPLICATIONS

BNPI (H-55) is recommended for detection of BNPI 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).

BNPI (H-55) is also recommended for detection of BNPI in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for BNPI siRNA (h): sc-29816, BNPI siRNA (m): sc-29817, BNPI shRNA Plasmid (h): sc-29816-SH, BNPI shRNA Plasmid (m): sc-29817-SH, BNPI shRNA (h) Lentiviral Particles: sc-29816-V and BNPI shRNA (m) Lentiviral Particles: sc-29817-V.

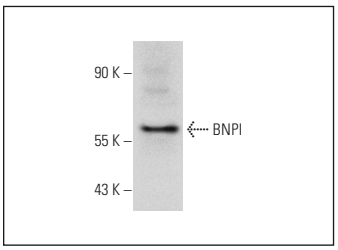
Molecular Weight of BNPI: 55 kDa.

Positive Controls: rat cerebellum extract: sc-2398 or mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



BNPI (H-55): sc-28940. Western blot analysis of BNPI expression in mouse brain tissue extract.

PROTOCOLS

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