

PNAd (H-140): sc-67404

BACKGROUND

PNAd, Protein N-terminal asparagine amidohydrolase, is a 310 amino acid protein encoded by the human gene NTAN1. PNAd is responsible for the side-chain deamidation of N-terminal asparagine residues to aspartate. It is required for the ubiquitin-dependent turnover of intracellular proteins that initiate with Met-Asn. These proteins are acetylated on the retained initiator methionine and can subsequently be modified by the removal of N-acetyl methionine by acylaminoacid hydrolase (AAH). Conversion of the resulting N-terminal asparagine to aspartate by PNAd renders the protein susceptible to arginylation, polyubiquitination and degradation as specified by the N-end rule. This enzyme does not act on substrates with internal or C-terminal asparagines and does not act on glutamine residues in any position.

REFERENCES

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2. Balogh, S.A., et al. 2000. Varying intertrial interval reveals temporally defined memory deficits and enhancements in NTAN1-deficient mice. *Learn. Mem.* 7: 279-286.
3. Kwon, Y.T., et al. 2000. Altered activity, social behavior, and spatial memory in mice lacking the NTAN1p amidase and the asparagine branch of the N-end rule pathway. *Mol. Cell. Biol.* 20: 4135-4148.
4. Balogh, S.A., et al. 2001. Facilitated stimulus-response associative learning and long-term memory in mice lacking the NTAN1 amidase of the N-end rule pathway. *Brain Res.* 892: 336-343.
5. Balogh, S.A., et al. 2003. Behavioral characterization of mice lacking the ubiquitin ligase UBR1 of the N-end rule pathway. *Genes Brain Behav.* 1: 223-229.
6. Goto, Y., et al. 2006. The magnetism responsive gene Ntan1 in mouse brain. *Neurochem. Int.* 49: 334-341.
7. Hirai, T., et al. 2006. Stimulation of ubiquitin-proteasome pathway through the expression of amidohydrolase for N-terminal asparagine (Ntan1) in cultured rat hippocampal neurons exposed to static magnetism. *J. Neurochem.* 96: 1519-1530.

CHROMOSOMAL LOCATION

Genetic locus: NTAN1 (human) mapping to 16p13.11; Ntan1 (mouse) mapping to 16 A1.

SOURCE

PNAd (H-140) is a rabbit polyclonal antibody raised against amino acids 171-310 mapping at the C-terminus of PNAd 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

PNAd (H-140) is recommended for detection of PNAd 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).

PNAd (H-140) is also recommended for detection of PNAd in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PNAd siRNA (h): sc-62832, PNAd siRNA (m): sc-62833, PNAd shRNA Plasmid (h): sc-62832-SH, PNAd shRNA Plasmid (m): sc-62833-SH, PNAd shRNA (h) Lentiviral Particles: sc-62832-V and PNAd shRNA (m) Lentiviral Particles: sc-62833-V.

Molecular Weight of PNAd: 35 kDa.

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.

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.