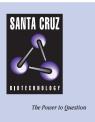
SANTA CRUZ BIOTECHNOLOGY, INC.

PNGase (C-19): sc-103126



BACKGROUND

PNGase, also known as NGLY1 (N-glycanase 1) or PNG1, is a 654 amino acid protein that localizes to the cytoplasm and contains one PAW domain and one PUB domain. Using Zinc as a cofactor, PNGase deglycosylates the denatured form of cytoplasmic N-linked glycoproteins, specifically cleaving the β -aspartylglucosamine residue in the target protein and assisting in proteasome-mediated degradation. PNGase is also capable of recognizing and deglycosylating misfolded proteins in the endoplasmic reticulum (ER), thereby playing a role in the elimination of misfolded glycoproteins. PNGase exists as four alternatively spliced isoforms and is functionally inhibited by Z-VAD-fmk, a caspase inhibitor that binds to PNGase and inhibits its enzymatic activity.

REFERENCES

- Suzuki, T., Park, H., Hollingsworth, N.M., Sternglanz, R. and Lennarz, W.J. 2000. PNG1, a yeast gene encoding a highly conserved peptide:N-glycanase. J. Cell Biol. 149: 1039-1052.
- Park, H., Suzuki, T. and Lennarz, W.J. 2001. Identification of proteins that interact with mammalian peptide:N-glycanase and implicate this hydrolase in the proteasome-dependent pathway for protein degradation. Proc. Natl. Acad. Sci. USA 98: 11163-11168.
- Suzuki, T., Kwofie, M.A. and Lennarz, W.J. 2003. Ngly1, a mouse gene encoding a deglycosylating enzyme implicated in proteasomal degradation: expression, genomic organization, and chromosomal mapping. Biochem. Biophys. Res. Commun. 304: 326-332.
- Misaghi, S., Pacold, M.E., Blom, D., Ploegh, H.L. and Korbel, G.A. 2004. Using a small molecule inhibitor of peptide: N-glycanase to probe its role in glycoprotein turnover. Chem. Biol. 11: 1677-1687.
- Allen, M.D., Buchberger, A. and Bycroft, M. 2006. The PUB domain functions as a p97 binding module in human peptide N-glycanase. J. Biol. Chem. 281: 25502-25508.
- Altrich-VanLith, M.L., Ostankovitch, M., Polefrone, J.M., Mosse, C.A., Shabanowitz, J., Hunt, D.F. and Engelhard, V.H. 2006. Processing of a class I-restricted epitope from tyrosinase requires peptide N-glycanase and the cooperative action of endoplasmic reticulum aminopeptidase 1 and cytosolic proteases. J. Immunol. 177: 5440-5450.
- Zhou, X., Zhao, G., Truglio, J.J., Wang, L., Li, G., Lennarz, W.J. and Schindelin, H. 2006. Structural and biochemical studies of the C-terminal domain of mouse peptide-N-glycanase identify it as a mannose-binding module. Proc. Natl. Acad. Sci. USA 103: 17214-17219.
- 8. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610661. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: NGLY1 (human) mapping to 3p24.2; Ngly1 (mouse) mapping to 14 A2.

RESEARCH USE

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

SOURCE

PNGase (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PNGase of human origin.

PRODUCT

Each vial contains 200 μg lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103126 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PNGase (C-19) is recommended for detection of PNGase 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with isoform PNGase3.

Suitable for use as control antibody for PNGase siRNA (h): sc-78460, PNGase siRNA (m): sc-152352, PNGase shRNA Plasmid (h): sc-78460-SH, PNGase shRNA Plasmid (m): sc-152352-SH, PNGase shRNA (h) Lentiviral Particles: sc-78460-V and PNGase shRNA (m) Lentiviral Particles: sc-152352-V.

Molecular Weight of PNGase: 74 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) Immunofluo-rescence: 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.

STORAGE

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

PROTOCOLS

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