SANTA CRUZ BIOTECHNOLOGY, INC.

N-SMase2 (N-17): sc-67693

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

N-SMase2 (neutral sphingomyelinase 2), also known as NSMASE2 or SMPD3 (sphingomyelin phosphodiesterase 3), is a ubiquitously expressed 655 amino acid member of the magnesium-dependent phosphohydrolase protein family. Localized to the membrane of the Golgi apparatus, N-SMase2 functions to catalyze the hydrolysis of sphingomyelin to form ceramide and phosphocholine—two proteins that mediate cell growth arrest and apoptosis. N-SMase2 is enzymatically activated by unsaturated fatty acids and phosphatidylserine and, through regulation of ceramide synthesis, is involved in growth suppression and postnatal development. Expression of N-SMase2 is upregulated during the G_0/G_1 phases of the cell cycle and optimal N-SMase2 activity occurs at a slightly basic pH of 7.5. N-SMase2 deficiency is the cause of chondrodysplasia, a genetic disorder characterized by impaired bone growth that leads to short stature, bowlegs and underdeveloped joints.

REFERENCES

1. Hofmann, K., et al. 2000. Cloning and characterization of the mammalian brain-specific, Mg^{2+}-dependent neutral sphingomyelinase. Proc. Natl. Acad. Sci. USA 97: 5895-5900.
2. Marchesini, N., et al. 2003. Biochemical properties of mammalian neutral sphingomyelinase 2 and its role in sphingolipid metabolism. J. Biol. Chem. 278: 13775-13783.
3. Aubin, I., et al. 2005. A deletion in the gene encoding sphingomyelin phosphodieste-rase 3 (SMPD3) results in osteogenesis and dentinogenesis imperfecta in the mouse. Nat. Genet. 37: 803-805.
4. Stoffel, W., et al. 2005. Neutral sphingomyelinase 2 (SMPD3) in the control of postnatal growth and development. Proc. Natl. Acad. Sci. USA 102: 4554-4559.

CHROMOSOMAL LOCATION

Genetic locus: SMPD3 (human) mapping to 16q22.1; Smpd3 (mouse) mapping to 8 D3.

SOURCE

N-SMase2 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of N-SMase2 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-67693 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

N-SMase2 (N-17) is recommended for detection of N-SMase2 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).

N-SMase2 (N-17) is also recommended for detection of N-SMase2 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for N-SMase2 siRNA (h): sc-62655, N-SMase2 siRNA (m): sc-62656, N-SMase2 shRNA Plasmid (h): sc-62655-SH, N-SMase2 shRNA Plasmid (m): sc-62656-SH, N-SMase2 shRNA (h) Lentiviral Particles: sc-62655-V and N-SMase2 shRNA (m) Lentiviral Particles: sc-62656-V.

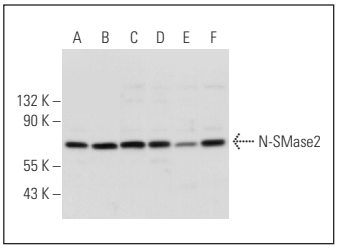
Molecular Weight of N-SMase2: 70 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

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.

DATA



N-SMase2 (N-17): sc-67693. Western blot analysis of N-SMase2 expression in HEK293 (**A**), Hep G2 (**B**), CCRF-CEM (**C**), HeLa (**D**), Jurkat (**E**) and K-562 (**F**) whole cell lysates.

RESEARCH USE

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