SANTA CRUZ BIOTECHNOLOGY, INC.

N-SMase (R-20): sc-26215

BACKGROUND

Sphingomyelin and its metabolic products are now known to have second messenger functions in a variety of cellular signaling pathways. At the epicenter of the sphingomyelin-cell signaling pathway is a family of phospholipases called sphingomyelinases. These enzymes cleave sphingomyelin to produce ceramide and phosphocholine. Ceramide in turn serves as a lipid second messenger that induces a variety of cell regulatory phenomenon such as programmed cell death (apoptosis), cell differentiation, cell proliferation and sterol homeostasis. Neutral sphingomyelinase (N-SMase) is a Mg^{2+} sensitive enzyme that can be activated by a host of physiologically relevant and structurally diverse molecules like tumor necrosis factor α (TNFα), oxidized human low density lipoproteins (Ox-LDL) and several growth factors.

REFERENCES

1. Chatterjee, S. 1999. Neutral sphingomyelinase: past, present and future. Chem. Phys. Lipids 102: 79-96.
2. Chan, E.C., et al. 2000. Purification and characterization of neutral sphingomyelinase from *Helicobacter pylori*. Biochemistry 39: 4838-4845.
3. Luberto, C., et al. 2002. Inhibition of tumor necrosis factor-induced cell death in MCF7 by a novel inhibitor of neutral sphingomyelinase. J. Biol. Chem. 277: 41128-41139.
4. Okamoto, Y., et al. 2002. Bcl-x_L interrupts oxidative activation of neutral sphingomyelinase. FEBS Lett. 530: 104-108.
5. Marchesini, N., et al. 2003. Biochemical properties of mammalian neutral sphingomyelinase 2 and its role in sphingolipid metabolism. J. Biol. Chem. 278: 13775-13783.

CHROMOSOMAL LOCATION

Genetic locus: SMPD2 (human) mapping to 6q21; Smpd2 (mouse) mapping to 10 B2.

SOURCE

N-SMase (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of N-SMase of rat 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-26215 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.

PROTOCOLS

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

APPLICATIONS

N-SMase (R-20) is recommended for detection of N-SMase of rat and, to a lesser extent, mouse 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).

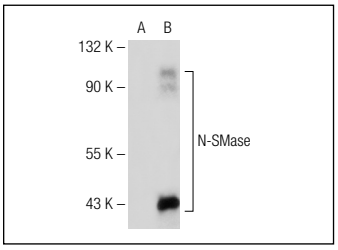
Suitable for use as control antibody for N-SMase siRNA (h): sc-106277, N-SMase siRNA (m): sc-43574, N-SMase shRNA Plasmid (h): sc-106277-SH, N-SMase shRNA Plasmid (m): sc-43574-SH, N-SMase shRNA (h) Lentiviral Particles: sc-106277-V and N-SMase shRNA (m) Lentiviral Particles: sc-43574-V.

Molecular Weight of N-SMase: 90 kDa.

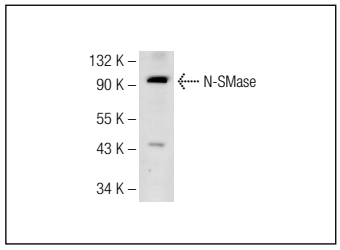
RECOMMENDED SECONDARY REAGENTS

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) 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



N-SMase (R-20): sc-26215. Western blot analysis of N-SMase expression in non-transfected: sc-117752 (**A**) and mouse N-SMase transfected: sc-121909 (**B**) 293T whole cell lysates.



N-SMase (R-20): sc-26215. Western blot analysis of N-SMase expression in U-698-M whole cell lysate.

RESEARCH USE

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