SANTA CRUZ BIOTECHNOLOGY, INC.

# N-SMase (B-1): sc-377135

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## 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 program-med 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 $\alpha$ (TNF$\alpha$), 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.


## CHROMOSOMAL LOCATION

Genetic locus: Smpd2 (mouse) mapping to 10 B2.

## SOURCE

N-SMase (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 383-421 near the C-terminus of N-SMase of mouse origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

N-SMase (B-1) is available conjugated to agarose (sc-377135 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377135 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377135 PE), fluorescein (sc-377135 FITC), Alexa Fluor® 488 (sc-377135 AF488), Alexa Fluor® 546 (sc-377135 AF546), Alexa Fluor® 594 (sc-377135 AF594) or Alexa Fluor® 647 (sc-377135 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377135 AF680) or Alexa Fluor® 790 (sc-377135 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377135 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).



## STORAGE

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

## APPLICATIONS

N-SMase (B-1) is recommended for detection of N-SMase of mouse origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 (m): sc-43574, N-SMase shRNA Plasmid (m): sc-43574-SH and N-SMase shRNA (m) Lentiviral Particles: sc-43574-V.

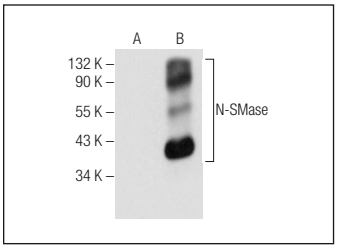
Molecular Weight of N-SMase: 48 kDa.

Positive Controls: N-SMase (m): 293T Lysate: sc-121909.

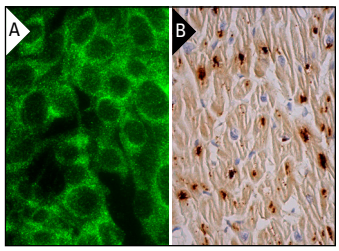
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA




N-SMase (B-1): sc-377135. 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 (B-1): sc-377135. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of urothelial cells (**B**).

## SELECT PRODUCT CITATIONS


1. Albacete-Albacete, L., et al. 2020. ECM deposition is driven by caveolin-1-dependent regulation of exosomal biogenesis and cargo sorting. J. Cell Biol. 219: e202006178.


## RESEARCH USE

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