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- Mindermengenzuschlag
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SANTA CRUZ BIOTECHNOLOGY, INC.

N-SMase2 (m): 293T Lysate: sc-121910

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. 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.
4. Aubin, I., et al. 2005. A deletion in the gene encoding Sphingomyelin phosphodiesterase 3 (Smpd3) results in osteogenesis and dentinogenesis imperfecta in the mouse. Nat. Genet. 37: 803-805.
5. De Palma, C., et al. 2006. Endothelial nitric oxide synthase activation by tumor necrosis factor α through neutral sphingomyelinase 2, sphingosine kinase 1, and sphingosine 1 phosphate receptors: a novel pathway relevant to the pathophysiology of endothelium. Arterioscler. Thromb. Vasc. Biol. 26: 99-105.
6. Krut, O., et al. 2006. Novel tumor necrosis factor-responsive mammalian neutral sphingomyelinase-3 is a C-tail-anchored protein. J. Biol. Chem. 281: 13784-13793.

CHROMOSOMAL LOCATION

Genetic locus: Smpd3 (mouse) mapping to 8 D3.

PRODUCT

N-SMase2 (m): 293T Lysate represents a lysate of mouse N-SMase2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

N-SMase2 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive N-SMase2 antibodies. Recommended use: 10-20 µl per lane.

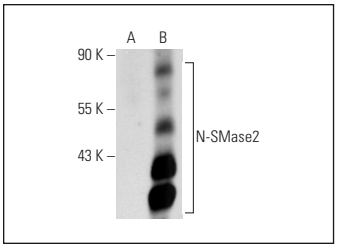
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

N-SMase2 (G-6): sc-166637 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse N-SMase2 expression in N-SMase2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



N-SMase2 (G-6): sc-166637. Western blot analysis of N-SMase2 expression in non-transfected: sc-117752 (**A**) and mouse N-SMase2 transfected: sc-121910 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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