

SMPDL3B (H-3): sc-137113

BACKGROUND

SMPDL3B (sphingomyelin phosphodiesterase, acid-like 3B), also known as ASMLPD or ASML3B (acid sphingomyelinase-like phosphodiesterase 3B), is a 455 amino acid secreted protein belonging to the acid sphingomyelinase family. It is expressed in granulosa cells of the ovarian follicle and is a homolog of ASM (acid sphingomyelinase). ASM is a lysosomal protein that hydrolyzes sphingomyelin to ceramide and phosphocholine playing an important role in apoptosis of germ cell lines. Deficiency of ASM is associated with type A and type B Niemann-Pick disease. Type A is a fatal neurodegenerative disorder seen in infancy and resulting in death by age three, whereas type B is a non-neuropathic disease with a later onset.

REFERENCES

- Quintern, L.E., et al. 1987. Acid sphingomyelinase from human urine: purification and characterization. *Biochim. Biophys. Acta* 922: 323-336.
- Schuchman, E.H., et al. 1991. Human acid sphingomyelinase. Isolation, nucleotide sequence and expression of the full-length and alternatively spliced cDNAs. *J. Biol. Chem.* 266: 8531-8539.
- Levrn, O., et al. 1991. Niemann-Pick disease: a frequent missense mutation in the acid sphingomyelinase gene of Ashkenazi Jewish type A and B patients. *Proc. Natl. Acad. Sci. USA* 88: 3748-3752.
- Takahashi, T., et al. 1992. Identification and expression of five mutations in the human acid sphingomyelinase gene causing types A and B Niemann-Pick disease. Molecular evidence for genetic heterogeneity in the neuropathic and non-neuropathic forms. *J. Biol. Chem.* 267: 12552-12558.
- Langmann, T., et al. 1999. Transcription factors Sp1 and AP-2 mediate induction of acid sphingomyelinase during monocytic differentiation. *J. Lipid Res.* 40: 870-880.

CHROMOSOMAL LOCATION

Genetic locus: SMPDL3B (human) mapping to 1p35.3; Smpdl3b (mouse) mapping to 4 D2.3.

SOURCE

SMPDL3B (H-3) is a mouse monoclonal antibody raised against amino acids 196-271 mapping within an internal region of SMPDL3B of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SMPDL3B (H-3) is available conjugated to agarose (sc-137113 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137113 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137113 PE), fluorescein (sc-137113 FITC), Alexa Fluor® 488 (sc-137113 AF488), Alexa Fluor® 546 (sc-137113 AF546), Alexa Fluor® 594 (sc-137113 AF594) or Alexa Fluor® 647 (sc-137113 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137113 AF680) or Alexa Fluor® 790 (sc-137113 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

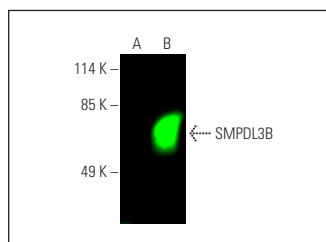
SMPDL3B (H-3) is recommended for detection of SMPDL3B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 SMPDL3B siRNA (h): sc-76525, SMPDL3B siRNA (m): sc-76526, SMPDL3B shRNA Plasmid (h): sc-76525-SH, SMPDL3B shRNA Plasmid (m): sc-76526-SH, SMPDL3B shRNA (h) Lentiviral Particles: sc-76525-V and SMPDL3B shRNA (m) Lentiviral Particles: sc-76526-V.

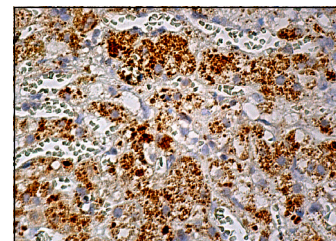
Molecular Weight of SMPDL3B: 51 kDa.

Positive Controls: SMPDL3B (m2): 293T Lysate: sc-126022.

DATA



SMPDL3B (H-3): sc-137113. Near-infrared western blot analysis of SMPDL3B expression in non-transfected: sc-117752 (A) and mouse SMPDL3B transfected: sc-126022 (B) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



SMPDL3B (H-3): sc-137113. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Fan, W., et al. 2021. SIRT1 regulates sphingolipid metabolism and neural differentiation of mouse embryonic stem cells through c-Myc-SMPDL3B. *Elife* 10: e67452.

STORAGE

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

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.