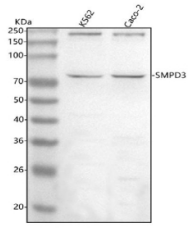
SMPD3 Antibody / Sphingomyelin phosphodiesterase 3 / nSMase2 (FY13150)

Catalog No.	Formulation	Size
FY13150	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9NY59
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This SMPD3 antibody is available for research use only.



Western blot analysis of SMPD3 using anti-SMPD3 antibody. Lane 1: human K562 whole cell lysates, Lane 2: human Caco-2 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-SMPD3 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. SMPD3 antibody detects the expected ~71 kDa monomer and an additional band near ~210 kDa in K562 and Caco-2 lysates. The higher band likely represents an SDS-resistant oligomeric form of nSMase2.

Description

SMPD3 antibody detects Sphingomyelin phosphodiesterase 3, a membrane-associated enzyme that hydrolyzes sphingomyelin to generate ceramide and phosphocholine. The UniProt recommended name is Sphingomyelin phosphodiesterase 3 (SMPD3). This enzyme, also known as neutral sphingomyelinase 2 (nSMase2), plays a key role in lipid metabolism, cell signaling, and exosome biogenesis.

Functionally, SMPD3 antibody identifies a 655-amino-acid enzyme localized to the plasma membrane and Golgi apparatus. SMPD3 catalyzes the production of ceramide, a lipid second messenger involved in apoptosis, differentiation, and inflammation. It regulates membrane curvature and vesicle budding, particularly in exosome secretion and cell stress responses.

The SMPD3 gene is located on chromosome 16p13.12 and is expressed in brain, liver, and skeletal tissue. SMPD3 activity influences cell growth, neuronal communication, and lipid raft organization. By controlling ceramide levels, SMPD3 links sphingolipid metabolism to cell fate decisions and inflammatory signaling.

Pathologically, dysregulation of SMPD3 contributes to metabolic, neurodegenerative, and cardiovascular diseases. Deficiency results in skeletal abnormalities (spondyloepimetaphyseal dysplasia) and altered lipid homeostasis. Overactivation can enhance ceramide-induced apoptosis or inflammatory cascades. Research using SMPD3 antibody supports studies in lipid signaling, neurobiology, and exosome biology.

SMPD3 antibody is validated for western blotting, immunofluorescence, and immunohistochemistry to detect sphingomyelinases and lipid signaling enzymes. NSJ Bioreagents provides SMPD3 antibody reagents optimized for cell signaling, metabolism, and membrane biology research.

Structurally, Sphingomyelin phosphodiesterase 3 contains an N-terminal hydrophobic domain for membrane association and a C-terminal catalytic domain requiring Mg2+ for activity. This antibody enables analysis of SMPD3Ã¯Â¿Â½s role in ceramide-mediated signal transduction and cellular stress responses.

Application Notes

Optimal dilution of the SMPD3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SMPD3 recombinant protein (Position: F184-D553) was used as the immunogen for the SMPD3 antibody.

Storage

After reconstitution, the SMPD3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.