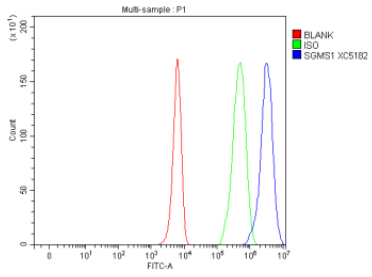
SGMS1 Antibody / Sphingomyelin synthase 1 (FY12069)

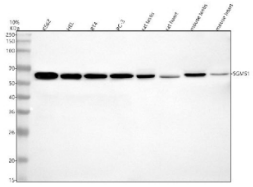
Catalog No.	Formulation	Size
FY12069	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
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	Q86VZ5
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SGMS1 antibody is available for research use only.



Flow Cytometry analysis of K562 cells using anti-K562 cells antibody. Overlay histogram showing K562 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-K562 cells antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of SGMS1 using anti-SGMS1 antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human K562 whole cell lysates, Lane 2: human HEL whole cell lysates, Lane 3: human RT4 whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat testis tissue lysates, Lane 6: rat heart tissue lysates, Lane 7: mouse testis tissue lysates, Lane 8: mouse heart tissue 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-SGMS1 antibody at 1:1000 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 an ECL Plus Western Blotting Substrate. The expected band size for SGMS1 is at ~49 kDa.

Description

SGMS1 antibody detects Sphingomyelin synthase 1, encoded by the SGMS1 gene. Sphingomyelin synthase 1 is a plasma membrane-associated enzyme that catalyzes the conversion of ceramide and phosphatidylcholine into sphingomyelin and diacylglycerol. SGMS1 antibody provides researchers with a tool for studying sphingolipid metabolism, membrane biology, and signaling processes linked to cell survival and apoptosis.

Sphingomyelin synthase 1 belongs to the sphingomyelin synthase family of enzymes and is localized at the plasma membrane and Golgi apparatus. Research using SGMS1 antibody has shown that the enzyme regulates levels of sphingomyelin, a major structural component of membranes, while simultaneously producing diacylglycerol, a second messenger that activates protein kinase C. This dual metabolic and signaling role highlights SGMS1 as a central regulator of lipid homeostasis and cell signaling pathways.

Studies with SGMS1 antibody have demonstrated that disruption of SGMS1 alters plasma membrane composition, impairing lipid raft formation and receptor signaling. Deficiency in SGMS1 leads to accumulation of ceramide, which promotes apoptosis, while excess activity favors cell survival and proliferation. This balance underscores the importance of SGMS1 in processes ranging from development to disease.

Dysregulation of Sphingomyelin synthase 1 has been associated with cancer, metabolic disease, and immune dysfunction. Research using SGMS1 antibody has shown that high SGMS1 activity supports tumor cell survival, while inhibition sensitizes cells to apoptosis-inducing agents. In immune biology, SGMS1 influences T cell receptor signaling and cytokine release. These findings make SGMS1 both a biomarker and a potential therapeutic target.

SGMS1 antibody is widely used in western blotting, immunohistochemistry, and immunofluorescence. Western blotting quantifies expression in cell lines and tissues, immunohistochemistry demonstrates expression in tumors and metabolic tissues, and immunofluorescence highlights subcellular distribution. These approaches make SGMS1 antibody indispensable for lipid biology research.

By supplying validated SGMS1 antibody reagents, NSJ Bioreagents supports studies into sphingolipid metabolism, apoptosis, and disease. Detection of Sphingomyelin synthase 1 provides researchers with insight into how lipid enzymes regulate both membrane composition and signaling.

Application Notes

Optimal dilution of the SGMS1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SGMS1 recombinant protein (Position: M1-T413) was used as the immunogen for the SGMS1 antibody.

Storage

After reconstitution, the SGMS1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.