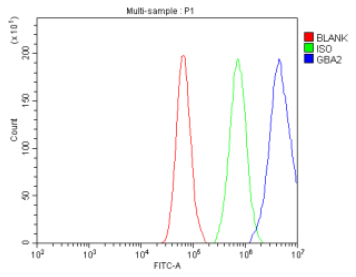
GBA2 Antibody / Non-lysosomal glucosylceramidase (FY13215)

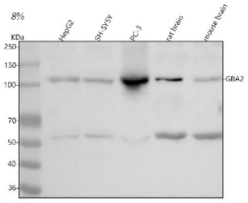
Catalog No.	Formulation	Size
FY13215	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	Q9HCG7
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This GBA2 antibody is available for research use only.



Flow Cytometry analysis of cells using anti-GBA2 antibody. Overlay histogram showing 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-GBA2 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 (Red line) was also used as a control.



Western blot analysis of GBA2 using anti-GBA2 antibody. Lane 1: human HepG2 whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human PC-3 whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: mouse brain 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-GBA2 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. Western blot detection of GBA2 shows the expected ~105 kDa full-length band and an additional ~55 kDa species, consistent with reported C-terminal proteolytic fragments of GBA2 observed in various cell types and tissues.

Description

GBA2 antibody detects Non-lysosomal glucosylceramidase, a cytoplasmic enzyme responsible for the hydrolysis of glucosylceramide to glucose and ceramide outside of lysosomes. The UniProt recommended name is Non-lysosomal glucosylceramidase (GBA2). This enzyme participates in sphingolipid metabolism and maintains the balance of glycosphingolipids that influence membrane structure, signaling, and lipid homeostasis.

Functionally, GBA2 antibody identifies a 927-amino-acid membrane-associated protein localized to the endoplasmic reticulum and Golgi apparatus. GBA2 catalyzes the removal of glucose from glucosylceramide, complementing the lysosomal enzyme GBA1 but functioning in non-lysosomal compartments. By regulating ceramide and glucosylceramide levels, GBA2 affects cell differentiation, apoptosis, and neuronal lipid metabolism.

The GBA2 gene is located on chromosome 9p13.3 and is highly expressed in brain, liver, testis, and kidney. Its activity is essential for maintaining sphingolipid turnover and membrane lipid composition, particularly in neuronal and reproductive tissues. GBA2 functions as a key metabolic enzyme in glycosphingolipid homeostasis and intracellular lipid transport.

Pathologically, mutations in GBA2 cause hereditary spastic paraplegia type 46 and autosomal recessive cerebellar ataxia, disorders characterized by impaired motor function and cerebellar degeneration. Loss of GBA2 activity leads to accumulation of glucosylceramide, resulting in disrupted lipid trafficking and neuronal dysfunction. Research using GBA2 antibody supports studies in lipid metabolism, neurobiology, and metabolic disease mechanisms.

GBA2 antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect glucosylceramidase enzymes. NSJ Bioreagents provides GBA2 antibody reagents optimized for studies in sphingolipid metabolism, cellular signaling, and neurological disorders.

Structurally, Non-lysosomal glucosylceramidase belongs to the glycoside hydrolase family 116 and contains a catalytic domain with a conserved nucleophilic residue required for glucosyl transfer. The enzyme is anchored to membranes through hydrophobic regions and operates in concert with lipid transporters. This antibody facilitates investigation of GBA2's role in non-lysosomal glycosphingolipid metabolism and neurological function.

Application Notes

Optimal dilution of the GBA2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GBA2 recombinant protein (Position: E17-Q869) was used as the immunogen for the GBA2 antibody.

Storage

After reconstitution, the GBA2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.