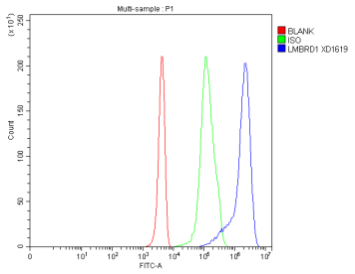
LMBRD1 Antibody / Lysosomal cobalamin transport escort protein 1 (FY13131)

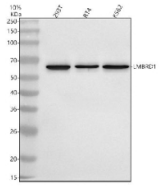
Catalog No.	Formulation	Size
FY13131	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q9NUN5
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This LMBRD1 antibody is available for research use only.



Flow Cytometry analysis of 293T cells using anti-LMBRD1 antibody. Overlay histogram showing 293T 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-LMBRD1 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 LMBRD1 using anti-LMBRD1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human RT4 whole cell lysates, Lane 3: human K562 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-LMBRD1 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 an ECL Plus Western Blotting Substrate. A specific band was detected for LMBRD1 at approximately 61 kDa. The expected molecular weight of LMBRD1 is ~61 kDa.

Description

LMBRD1 antibody detects Lysosomal cobalamin transport escort protein 1, an intracellular transporter essential for vitamin B12 metabolism. The UniProt recommended name is Lysosomal cobalamin transport escort protein 1 (LMBRD1). This membrane-associated protein facilitates the export of cobalamin (vitamin B12) from lysosomes into the cytoplasm, where it is converted into active cofactors for metabolic enzymes.

Functionally, LMBRD1 antibody identifies a 540-amino-acid transmembrane protein localized to the lysosomal membrane. LMBRD1 interacts with the lysosomal cobalamin transporter ABCD4 to mediate the transfer of cobalamin from endocytic vesicles to the cytosol. This process is crucial for the formation of methylcobalamin and adenosylcobalamin, cofactors required for methionine synthase and methylmalonyl-CoA mutase activity.

The LMBRD1 gene is located on chromosome 6q13 and is expressed in liver, kidney, and other metabolically active tissues. Its function links lysosomal transport to one-carbon metabolism and mitochondrial energy homeostasis. Proper LMBRD1 activity ensures efficient cobalamin utilization and cellular methylation balance.

Pathologically, mutations in LMBRD1 cause cobalamin deficiency type F (cblF), a metabolic disorder characterized by methylmalonic acidemia and homocystinuria. Defects in LMBRD1 disrupt lysosomal cobalamin release, leading to systemic metabolic dysfunction. Research using LMBRD1 antibody supports studies in lysosomal biology, vitamin metabolism, and inherited metabolic diseases.

LMBRD1 antibody is validated for western blotting, immunofluorescence, and immunohistochemistry to detect lysosomal transport proteins. NSJ Bioreagents provides LMBRD1 antibody reagents optimized for research in metabolism, intracellular trafficking, and lysosomal function.

Structurally, Lysosomal cobalamin transport escort protein 1 contains multiple transmembrane helices and a cytosolic domain that interacts with ABCD4. This antibody aids in exploring LMBRD1's mechanistic role in cobalamin metabolism and cellular nutrient transport.

Application Notes

Optimal dilution of the LMBRD1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human LMBRD1 recombinant protein (Position: D67-A540) was used as the immunogen for the LMBRD1 antibody.

Storage

After reconstitution, the LMBRD1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.