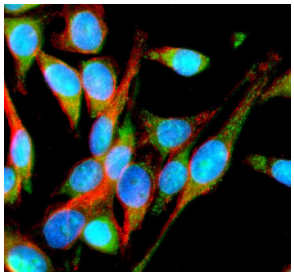
IMMP2L Antibody / Inner mitochondrial membrane peptidase subunit 2-like (FY12182)

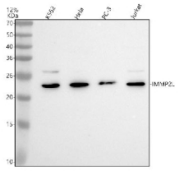
Catalog No.	Formulation	Size
FY12182	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

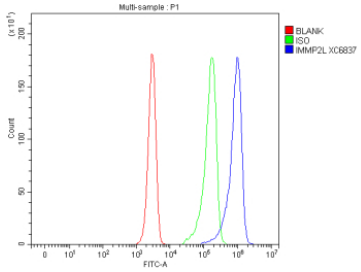
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q96T52
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This IMMP2L antibody is available for research use only.



Immunofluorescent staining of IMMP2L using anti-IMMP2L antibody (green) and anti-Beta Tubulin antibody (red). IMMP2L was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-IMMP2L antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of IMMP2L using anti-IMMP2L 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 Hela whole cell lysates, Lane 3: human PC-3 whole cell lysates, Lane 4: human Jurkat 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-IMMP2L 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. The expected band size for IMMP2L is at 20 kDa.



Flow Cytometry analysis of Jurkat cells using anti-IMMP2L antibody. Overlay histogram showing Jurkat 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-IMMP2L 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.

Description

IMMP2L antibody detects Inner mitochondrial membrane peptidase subunit 2-like protein, encoded by the IMMP2L gene on chromosome 7q31.1. IMMP2L antibody is used to study this mitochondrial peptidase that processes signal peptides from proteins targeted to the inner mitochondrial membrane. IMMP2L belongs to the peptidase M76 family and is essential for mitochondrial protein maturation, respiratory function, and cellular energy metabolism. Expression is broadly detected across tissues, with high levels in heart, skeletal muscle, and brain where oxidative phosphorylation demand is highest.

Structurally, IMMP2L is a membrane-bound subunit of the inner mitochondrial membrane peptidase (IMP) complex. This complex removes targeting peptides from proteins after import into mitochondria, enabling their proper integration or function within the inner membrane. IMMP2L, along with its partner IMMP1L, provides catalytic activity within this protease system. It is characterized by conserved zinc-binding motifs and transmembrane helices that localize it to the inner membrane.

Functionally, IMMP2L processes mitochondrial proteins such as cytochrome c1 and subunits of cytochrome oxidase, enabling their maturation and assembly into respiratory complexes. By regulating processing of nuclear-encoded mitochondrial proteins, IMMP2L ensures proper electron transport chain activity and ATP production. Deficiency leads to accumulation of precursor proteins, impaired respiration, and increased oxidative stress. Knockdown or mutation of IMMP2L disrupts mitochondrial function, highlighting its essential role. Researchers use IMMP2L antibody to explore mitochondrial protein processing, respiratory chain assembly, and energy metabolism.

Clinically, IMMP2L has been implicated in neurological and psychiatric conditions. Genetic variants and structural rearrangements involving IMMP2L are associated with Tourette syndrome, autism spectrum disorders, and attention-deficit hyperactivity disorder. While the exact pathogenic mechanism remains unclear, disruption of mitochondrial protein processing is thought to alter neuronal metabolism and signaling. IMMP2L variants have also been linked to Parkinson's disease and age-related mitochondrial decline. These findings make IMMP2L a target of interest in neurodevelopmental and neurodegenerative research. NSJ Bioreagents provides IMMP2L antibody as a high-quality reagent to study mitochondrial proteostasis, neurological disease, and energy homeostasis.

Experimentally, IMMP2L antibody is applied in western blotting to detect the ~90 kDa protein, in immunofluorescence to

study mitochondrial localization, and in immunohistochemistry to evaluate tissue-specific expression. Immunoprecipitation with IMMP2L antibody can isolate the IMP complex, enabling analysis of its substrates and activity. These approaches provide tools to dissect mitochondrial protein processing pathways in health and disease.

Application Notes

Optimal dilution of the IMMP2L antibody should be determined by the researcher.

Immunogen

E.coli-derived human IMMP2L recombinant protein (Position: M1-E175) was used as the immunogen for the IMMP2L antibody.

Storage

After reconstitution, the IMMP2L antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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