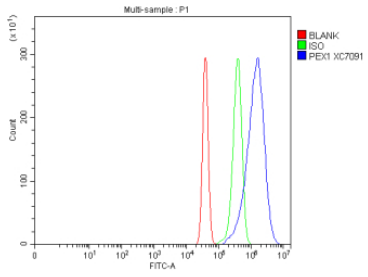
Peroxin 1 Antibody / PEX1 (FY12288)

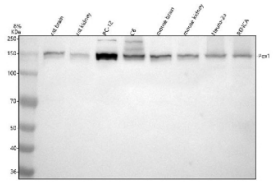
Catalog No.	Formulation	Size
FY12288	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	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	Q5BL07
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This Peroxin 1 antibody is available for research use only.



Flow Cytometry analysis of mouse Neuro-2a cells using anti-Peroxin 1 antibody. Overlay histogram showing Neuro-2a 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-Peroxin 1 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 Peroxin 1 using anti-Peroxin 1 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat brain tissue lysates, Lane 2: rat kidney tissue lysates, Lane 3: rat PC-12 whole cell lysates, Lane 4: rat C6 whole cell lysates, Lane 5: mouse brain tissue lysates, Lane 6: mouse kidney tissue lysates, Lane 7: mouse Neuro-2a whole cell lysates, Lane 8: mouse RenCa 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-Peroxin 1 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 molecular weight of Peroxin 1 is at 143 kDa.

Description

Peroxin 1 antibody detects Peroxisomal biogenesis factor 1, encoded by the PEX1 gene on chromosome 7q21.2. Peroxin 1 antibody is commonly used in studies of peroxisome biology, metabolism, and genetic disorders. Peroxin 1 is a large AAA ATPase that is essential for peroxisome biogenesis and maintenance. It functions in the recycling of the peroxisomal import receptor PEX5, thereby supporting import of matrix proteins into peroxisomes. This process ensures that enzymes required for beta-oxidation of fatty acids, plasmalogen synthesis, and detoxification of reactive oxygen species are correctly localized.

Structurally, Peroxin 1 is a ~147 kDa protein containing two AAA ATPase domains that hydrolyze ATP to drive conformational changes. These domains form a hexameric ring structure that provides mechanical force for receptor recycling. PEX1 localizes to the peroxisomal membrane, where it cooperates with PEX6 to dislocate PEX5 after cargo delivery. Mutations in PEX1 disrupt this process, leading to defective peroxisome assembly.

Functionally, Peroxin 1 supports peroxisomal protein import, organelle maintenance, and lipid metabolism. It plays a vital role in processing very long-chain fatty acids, bile acid intermediates, and ether phospholipids. Researchers use Peroxin 1 antibody to study peroxisome biogenesis, metabolic regulation, and genetic disease mechanisms.

Clinically, mutations in PEX1 are the most common cause of Zellweger spectrum disorders, a group of peroxisome biogenesis disorders characterized by developmental delay, liver dysfunction, and neurodegeneration. Severity ranges from lethal neonatal disease to milder phenotypes. Understanding PEX1 function is critical for developing therapies for peroxisomal disorders. NSJ Bioreagents supplies Peroxin 1 antibody for research in peroxisome biology and metabolic diseases.

Experimentally, Peroxin 1 antibody is used in western blotting to detect the ~147 kDa protein, in immunofluorescence microscopy to visualize peroxisomal localization, and in immunohistochemistry to study tissue-specific expression. Co-immunoprecipitation with Peroxin 1 antibody helps identify interaction partners, including PEX6 and PEX5.

Application Notes

Optimal dilution of the Peroxin 1 antibody should be determined by the researcher.

Immunogen

E.coli-derived mouse PEX1 recombinant protein (Position: R25-A1284) was used as the immunogen for the Peroxin 1 antibody.

Storage

After reconstitution, the Peroxin 1 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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