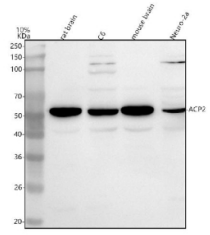
ACP2 Antibody / Lysosomal acid phosphatase 2 (FY12660)

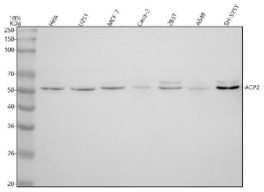
Catalog No.	Formulation	Size
FY12660	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	P11117
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This ACP2 antibody is available for research use only.



Western blot analysis of ACP2 using anti-ACP2 antibody. Lane 1: rat brain tissue lysates, Lane 2: rat C6 whole cell lysates, Lane 3: mouse brain tissue lysates, Lane 4: mouse Neuro-2a 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-ACP2 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. The expected molecular weight of ACP2 is at 48,18 kDa.



Western blot analysis of ACP2 using anti-ACP2 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human U251 whole cell lysates, Lane 3: human MCF-7 whole cell lysates, Lane 4: human Caco-2 whole cell lysates, Lane 5: human 293T whole cell lysates, Lane 6: human whole cell lysates, Lane 7: human SH-SY5Y 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-ACP2 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. The expected molecular weight of ACP2 is at 48,18 kDa.

Description

ACP2 antibody detects Lysosomal acid phosphatase 2, an enzyme responsible for the hydrolysis of phosphate esters within the acidic environment of lysosomes. ACP2 plays an essential role in the degradation of macromolecules, phosphate turnover, and lysosomal homeostasis. It functions as part of a larger lysosomal complex that regulates both nutrient recycling and intracellular signaling. The ACP2 antibody is widely used in cell biology, metabolism, and pathology research to study lysosomal function, enzyme regulation, and metabolic disorders.

ACP2 is encoded by the ACP2 gene located on human chromosome 11p11.2. The protein is approximately 452 amino acids in length and is synthesized as a precursor that undergoes proteolytic cleavage into two subunitsÃ¯Â¿Â½a 36 kilodalton alpha subunit and a 14 kilodalton beta subunitÃ¯Â¿Â½that together form the active enzyme. ACP2 localizes predominantly to the lysosomal lumen but can also be detected in late endosomes and phagosomes, reflecting its involvement in diverse degradative pathways.

The ACP2 antibody detects the 50 kilodalton precursor and its processed subunits by western blot and shows punctate lysosomal staining by immunofluorescence microscopy. ACP2 participates in the hydrolysis of phosphate-containing substrates derived from nucleotides, phospholipids, and other macromolecules, releasing inorganic phosphate for metabolic reuse. It complements the function of acid phosphatase ACP3, ensuring redundancy in phosphate metabolism and cellular cleanup.

Mutations or deficiencies in ACP2 lead to acid phosphatase deficiency, a rare lysosomal storage disorder characterized by abnormal accumulation of phosphomonoesters and progressive neurodegeneration. Reduced ACP2 activity has also been implicated in osteopetrosis-like bone disorders and altered immune responses, as lysosomal enzymes regulate antigen presentation and macrophage function. Conversely, upregulation of ACP2 is observed during macrophage activation and tissue remodeling, highlighting its adaptive role in immune and metabolic balance.

As a lysosomal hydrolase linking phosphate metabolism to intracellular clearance, ACP2 is a valuable marker for lysosome integrity and metabolic health. NSJ Bioreagents provides a validated ACP2 antibody optimized for its applications, supporting research into catabolic pathways, phosphate metabolism, and lysosomal storage diseases.

Application Notes

Optimal dilution of the ACP2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human ACP2 recombinant protein (Position: R31-H88) was used as the immunogen for the ACP2 antibody.

Storage

After reconstitution, the ACP2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.