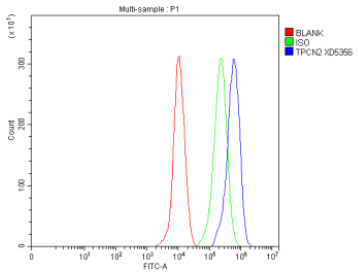
TPCN2 Antibody / Two-pore channel 2 (FY12730)

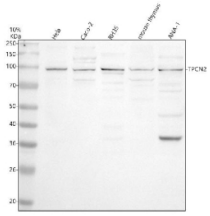
Catalog No.	Formulation	Size
FY12730	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q8NHX9
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This TPCN2 antibody is available for research use only.



Flow Cytometry analysis of THP-1 cells using anti-TPCN2 antibody. Overlay histogram showing THP-1 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-TPCN2 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 TPCN2 using anti-TPCN2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human Caco-2 whole cell lysates Lane 3: rat RH35 whole cell lysates, Lane 4: mouse thymus tissue lysates, Lane 5: mouse Ana-1 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-TPCN2 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 predominant band is observed at ~95 kDa, above the ~85 kDa calculated mass, consistent with glycosylated membrane-associated TPCN2. Lighter lower bands likely represent less-glycosylated or proteolytically processed forms.

Description

TPCN2 antibody detects Two-pore channel 2, an endolysosomal cation channel that mediates calcium and sodium flux in response to nicotinic acid adenine dinucleotide phosphate (NAADP) signaling. Encoded by the TPCN2 gene on chromosome 11q13.4, this channel is part of the two-pore channel family that regulates intracellular calcium release from acidic organelles such as lysosomes and endosomes. TPCN2 contains two homologous pore-forming domains, each with six transmembrane helices, and functions as a homodimeric voltage-gated ion channel. It plays a key role in vesicle trafficking, autophagy, endosomal fusion, and cellular excitability.

TPCN2 is widely expressed in kidney, liver, pancreas, and smooth muscle tissues, where it coordinates calcium-dependent signaling events. Activation of TPCN2 by NAADP triggers localized calcium release that modulates downstream pathways, including mTOR signaling, lysosomal exocytosis, and metabolic adaptation. Genetic studies have linked TPCN2 variants to pigmentation differences and hair color determination, highlighting its broader physiological influence. In neurons, TPCN2 regulates endolysosomal dynamics essential for synaptic vesicle recycling and signal transmission.

The TPCN2 antibody is a key reagent for cell signaling, membrane biology, and neurophysiology studies. Western blot analysis identifies a 75 kilodalton band corresponding to full-length TPCN2, while immunofluorescence reveals punctate staining consistent with lysosomal localization. The antibody enables detection of TPCN2 in subcellular fractionation and colocalization experiments with LAMP1 and Rab7 markers. Because endolysosomal calcium release impacts autophagy, metabolism, and exocytosis, this antibody supports research into pathways controlling intracellular trafficking and energy homeostasis.

Loss or dysregulation of TPCN2 impairs lysosomal function, alters autophagic flux, and contributes to disorders involving calcium signaling imbalance. Elevated expression has been associated with cancer cell invasiveness and altered vesicular pH homeostasis. The TPCN2 antibody allows researchers to evaluate how NAADP-dependent calcium signaling influences physiological and pathological processes. NSJ Bioreagents provides this antibody validated for its applications, ensuring accurate and reproducible detection of Two-pore channel 2 across species.

Application Notes

Optimal dilution of the TPCN2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TPCN2 recombinant protein (Position: L26-R752) was used as the immunogen for the TPCN2 antibody.

Storage

After reconstitution, the TPCN2 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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