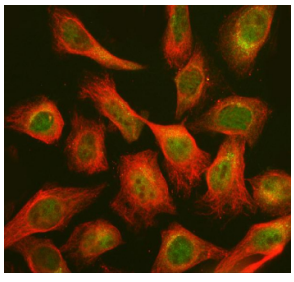
CHP2 Antibody / Calcineurin B homologous protein 2 (FY12714)

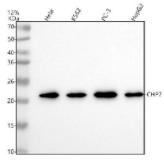
Catalog No.	Formulation	Size
FY12714	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

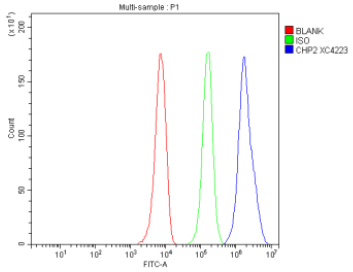
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	O43745
Localization	Cytoplasm, nucleus, cell membrane
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 CHP2 antibody is available for research use only.



Immunofluorescent staining of CHP2 using anti-CHP2 antibody (green) and anti-Beta Tubulin antibody (red). CHP2 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-CHP2 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and DyLight 594 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of CHP2 using anti-CHP2 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human K562 whole cell lysates, Lane 3: human PC-3 whole cell lysates, Lane 4: human HepG2 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-CHP2 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. A specific band was detected for CHP2 at approximately 22 kDa. The expected molecular weight of CHP2 is ~22 kDa.



Flow Cytometry analysis of HepG2 cells using anti-CHP2 antibody. Overlay histogram showing HepG2 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-CHP2 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

CHP2 antibody detects Calcineurin B homologous protein 2 (also known as CHP2 or Calcium-binding protein P22), a calcium-binding regulatory protein that modulates sodium-hydrogen exchanger (NHE) activity and signal transduction. Encoded by the CHP2 gene on chromosome Xq26.1, this EF-hand protein shares strong sequence similarity with CHP1 and serves as a cofactor for NHE family members and calcineurin-like enzymes. CHP2 contains three EF-hand calcium-binding motifs that undergo conformational changes upon Ca2+ binding, allowing dynamic interactions with target proteins and membranes. Through its calcium-sensitive regulatory role, CHP2 influences intracellular pH control, cell proliferation, and migration.

CHP2 is expressed predominantly in the heart, skeletal muscle, and certain cancers, including colon and pancreatic tumors. It binds directly to the cytoplasmic tail of sodium-hydrogen exchangers (NHE1, NHE2, NHE3) to stabilize and activate their function. Unlike CHP1, which is ubiquitously expressed, CHP2 expression is more tissue-specific and often upregulated in malignant cells. By regulating NHE activity, CHP2 contributes to pH homeostasis essential for tumor cell survival and motility. Overexpression of CHP2 has been linked to enhanced proliferation and metastatic potential through activation of MAPK and AKT signaling pathways.

The CHP2 antibody is widely used in cell signaling and cancer metabolism research to study calcium-regulated ion transport and tumor biology. Western blotting typically detects a 22 kilodalton band corresponding to the full-length protein, while immunofluorescence shows cytoplasmic and membrane localization consistent with NHE association. Researchers employ the CHP2 antibody to evaluate calcium-dependent signaling events and to compare CHP isoform expression in normal versus transformed cells. Its use extends to studies on cardiac physiology, as CHP2 modulates Ca2+-sensitive processes and contributes to excitation-contraction coupling. NSJ Bioreagents offers this antibody validated for its applications, ensuring precise detection in human and model systems.

Application Notes

Optimal dilution of the CHP2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human CHP2 recombinant protein (Position: M1-K196) was used as the immunogen for the CHP2 antibody.

Storage

After reconstitution, the CHP2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.