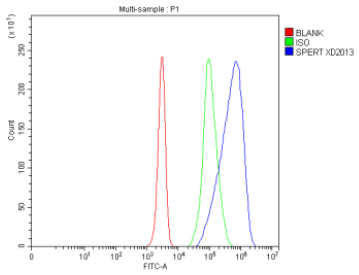
CBY2 Antibody / Chibby 2 (FY12736)

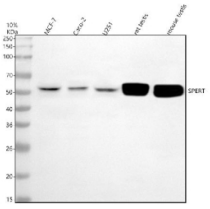
Catalog No.	Formulation	Size
FY12736	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q8NA61
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This CBY2 antibody is available for research use only.



Flow Cytometry analysis of Jurkat cells using anti-CBY2 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-CBY2 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 CBY2 using anti-CBY2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human MCF-7 whole cell lysates, Lane 2: human Caco-2 whole cell lysates, Lane 3: human U251 whole cell lysates, Lane 4: rat testis tissue lysates, Lane 5: mouse testis tissue 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-CBY2 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 specific band was detected for CBY2 at approximately 52 kDa. The expected molecular weight of CBY2 is ~52 kDa.

Description

CBY2 antibody detects Chibby homolog 2, a centrosome- and cilium-associated protein involved in ciliogenesis, cell polarity, and Wnt signaling regulation. Encoded by the CBY2 gene on chromosome 12q24.13, this protein belongs to the Chibby family, which includes CBY1 and CBY3, known for modulating beta-catenin signaling and ciliary structure. CBY2 contains coiled-coil domains that mediate dimerization and interaction with other ciliary proteins such as CEP164 and ODF2. It localizes to the basal body and transition zone of cilia, where it contributes to the assembly and stabilization of the ciliary axoneme.

CBY2 is expressed in ciliated tissues including respiratory epithelium, reproductive organs, and brain ependyma. It plays an essential role in the early stages of ciliogenesis by promoting docking of basal bodies to the plasma membrane and initiating axoneme extension. Disruption of CBY2 function leads to defective ciliogenesis, altered epithelial polarity, and impaired signaling through cilia-dependent pathways such as Hedgehog and Wnt. In reproductive cells, CBY2 contributes to flagellar formation and sperm motility, while in neurons it supports ependymal cilia function crucial for cerebrospinal fluid flow.

The CBY2 antibody is widely used in cell biology and developmental studies to analyze ciliary formation, centrosomal organization, and beta-catenin signaling. Western blot analysis detects a 42 kilodalton band corresponding to full-length CBY2, and immunofluorescence reveals punctate staining at basal bodies marked by gamma-tubulin. In cilia-deficient models, CBY2 expression serves as a marker for disrupted ciliogenesis. The antibody is also useful for exploring CBY2's role in planar cell polarity and coordination of multiciliated cell differentiation.

Mutations or reduced expression of CBY2 have been linked to ciliopathies, infertility, and hydrocephalus, reflecting its vital role in ciliary assembly. The CBY2 antibody provides a powerful tool for investigating these disorders and for mapping ciliary protein networks in epithelial and germline systems. NSJ Bioreagents supplies this antibody validated for its applications, ensuring reliable results in research on centrosome and cilia biology.

Application Notes

Optimal dilution of the CBY2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human CBY2 recombinant protein (Position: E40-V448) was used as the immunogen for the CBY2 antibody.

Storage

After reconstitution, the CBY2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.