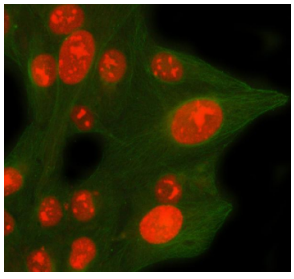
CDCA8 Antibody / Cell division cycle-associated protein 8 / Borealin (FY12693)

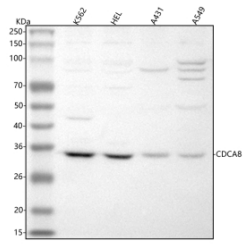
Catalog No.	Formulation	Size
FY12693	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

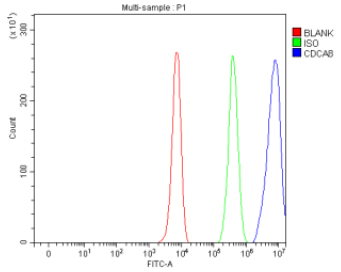
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q53HL2
Localization	Nucleus, Nucleolus
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This CDCA8 antibody is available for research use only.



Immunofluorescent staining of CDCA8 using anti-CDCA8 antibody (red) and anti-Beta Tubulin antibody (green). CDCA8 was detected in immunocytochemical section of U2OS cell. 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-CDCA8 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG and DyLight 488 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 CDCA8 using anti-CDCA8 antibody. Lane 1: human K562 whole cell lysates, Lane 2: human HEL whole cell lysates, Lane 3: human whole cell lysates, Lane 4: human 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-CDCA8 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 CDCA8 is ~31 kDa.



Flow Cytometry analysis of K562 cells using anti-CDCA8 antibody. Overlay histogram showing K562 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-CDCA8 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 (Red line) was also used as a control.

Description

CDCA8 antibody recognizes Cell division cycle-associated protein 8, also known as Borealin, a core component of the chromosomal passenger complex (CPC) that governs chromosome segregation, spindle assembly, and cytokinesis. Encoded by the CDCA8 gene on chromosome 1p34.3, this protein interacts with Aurora B kinase, INCENP, and Survivin to form a functional complex that ensures accurate mitotic progression. Borealin is essential for proper kinetochore-microtubule attachment, spindle checkpoint activation, and correction of mitotic errors, thereby safeguarding genomic stability during cell division.

During mitosis, Borealin localizes to centromeres in metaphase and relocates to the spindle midzone during anaphase, coordinating the transition from chromosome alignment to cytokinesis. Loss of CDCA8 function results in chromosome missegregation, lagging chromatids, and multinucleation, phenotypes commonly associated with aneuploidy and cancer. Expression of CDCA8 peaks during the G2/M phase, reflecting its cell cycle-dependent regulation. Overexpression has been documented in a range of malignancies including breast, lung, and colorectal cancers, correlating with poor prognosis and high proliferative indices.

The CDCA8 antibody is widely used in cell cycle and cancer research to detect Borealin localization and expression dynamics. Immunofluorescence analysis with this antibody reveals distinct centromeric staining during metaphase and midbody localization in late mitosis. Western blotting identifies a 35 kilodalton band corresponding to the full-length protein. Because the chromosomal passenger complex regulates essential mitotic checkpoints, the CDCA8 antibody provides a critical tool for studying mechanisms of mitotic fidelity and tumorigenesis.

CDCA8 cooperates with Aurora B to phosphorylate substrates involved in spindle tension sensing and cytokinesis. Disruption of this interaction impairs CPC activity and leads to mitotic failure. Borealin's ability to bind DNA through its N-terminal domain and oligomerize via its coiled-coil region enables structural stability of the CPC. Inhibition or knockdown of CDCA8 sensitizes tumor cells to microtubule-targeting drugs, highlighting its potential as a therapeutic target. The antibody thus supports translational research exploring CPC inhibitors and mitotic checkpoint modulators in cancer therapy.

In developmental biology, CDCA8 is required for proper cell division during embryogenesis and organogenesis. The CDCA8 antibody facilitates identification of proliferating cells in rapidly dividing tissues and embryonic stem cell cultures. NSJ Bioreagents provides this antibody validated for its applications, ensuring consistent results in mitotic and oncogenic studies.

Application Notes

Optimal dilution of the CDCA8 antibody should be determined by the researcher.

Immunogen

E.coli-derived human CDCA8 recombinant protein (Position: D72-K280) was used as the immunogen for the CDCA8 antibody.

Storage

After reconstitution, the CDCA8 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.