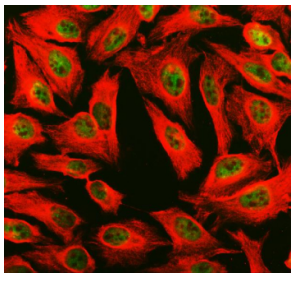
PHF8 Antibody / Plant homeodomain finger protein 8 (FY12585)

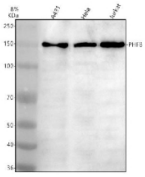
Catalog No.	Formulation	Size
FY12585	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

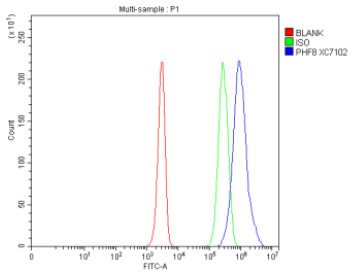
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9UPP1
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This PHF8 antibody is available for research use only.



Immunofluorescent staining of PHF8 using anti-PHF8 antibody (green) and anti-Beta Tubulin antibody (red). PHF8 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-PHF8 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 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 PHF8 using anti-PHF8 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human whole cell lysates, Lane 2: human Hela whole cell lysates, Lane 3: human Jurkat 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-PHF8 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. Western blot analysis of cell lysates probed with anti-PHF8 shows a major band at ~140 kDa, higher than the predicted ~118 kDa, consistent with the known phosphorylated form of PHF8 that migrates more slowly on SDS-PAGE.



Flow Cytometry analysis of Jurkat cells using anti-PHF8 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-PHF8 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

PHF8 antibody detects Plant homeodomain finger protein 8, a histone demethylase that regulates chromatin structure and transcription by removing methyl groups from lysine residues on histones. PHF8 is a member of the JmjC domain-containing family of histone demethylases and is particularly known for its ability to demethylate mono- and dimethylated histone H3 lysine 9 and lysine 27. Through this enzymatic activity, PHF8 influences gene activation during development, cell cycle progression, and neuronal differentiation. The PHF8 antibody is widely used in epigenetics and developmental biology research to study histone modification, chromatin remodeling, and transcriptional regulation.

PHF8 is encoded by the PHF8 gene located on human chromosome Xp11.22. The protein is approximately 1,024 amino acids in length and contains two major domains: a plant homeodomain (PHD) finger that recognizes trimethylated histone H3 lysine 4 and a Jumonji C (JmjC) catalytic domain responsible for demethylation. By binding to active chromatin marks via the PHD domain, PHF8 is recruited to promoter regions where it removes repressive histone marks, facilitating transcriptional initiation.

The PHF8 antibody detects a 120-140 kilodalton protein by western blot and shows nuclear localization under immunofluorescence microscopy. PHF8 participates in multiple developmental processes, including craniofacial morphogenesis and neural differentiation. In neurons, it regulates genes required for synaptic growth, neurite extension, and neurotransmission. Loss of PHF8 function leads to intellectual disability, cleft lip and palate, and X-linked mental retardation syndromes, emphasizing its critical role in human development.

At the molecular level, PHF8 acts as both an epigenetic activator and repressor, depending on context. It associates with transcription factors such as TCF3 and ZNF711 to coordinate developmental gene expression programs. PHF8 also interacts with components of the RNA polymerase II complex, linking histone demethylation to active transcription elongation. In cancer biology, overexpression of PHF8 enhances cell proliferation and epithelial-to-mesenchymal transition, while its depletion suppresses tumor growth by re-establishing chromatin repression.

Because of its dual functions in transcriptional activation and chromatin organization, PHF8 serves as an important biomarker for studying epigenetic mechanisms in development and disease. NSJ Bioreagents provides a validated PHF8 antibody optimized for its applications, supporting research into histone demethylation, transcriptional control, and

developmental regulation.

Application Notes

Optimal dilution of the PHF8 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PHF8 recombinant protein (Position: H108-D946) was used as the immunogen for the PHF8 antibody.

Storage

After reconstitution, the PHF8 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.