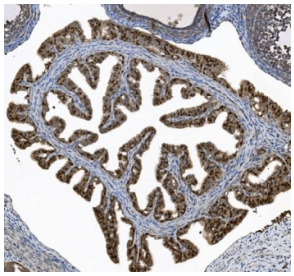
HFH-4 Antibody / FOXJ1 (RQ6422)

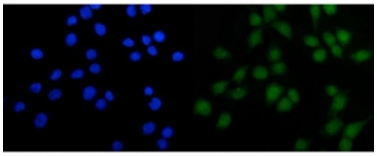
Catalog No.	Formulation	Size
RQ6422	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

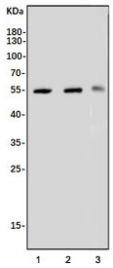
Availability	1-3 business days
Species Reactivity	Human, Rat
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q92949
Localization	Nuclear
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunofluorescence (FFPE) : 5ug/ml Flow Cytometry : 1-3ug/million cells Direct ELISA : 0.1-0.5ug/ml
Limitations	This HFH-4 antibody is available for research use only.



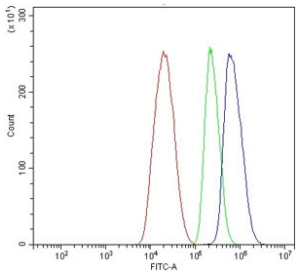
Immunohistochemistry of HFH-4/FOXJ1 in rat ovary tissue. HFH-4 antibody staining is observed predominantly in ovarian epithelial cells within a paraffin-embedded rat ovary section, consistent with nuclear localization of FOXJ1 in ciliated or ciliogenesis-associated epithelial cells. Heat mediated antigen retrieval was performed using EDTA buffer (pH 8.0). Sections were blocked with 10% goat serum and incubated with rabbit anti-HFH-4/FOXJ1 antibody at 2 ug/ml overnight at 4C, followed by biotinylated goat anti-rabbit IgG secondary antibody. Signal was developed using streptavidin-biotin complex with DAB chromogen, and nuclei were counterstained with hematoxylin.



Immunofluorescent staining of FFPE human Caco-2 cells with HFH-4 antibody (green) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of 1) human SW579, 2) human SK-O-V3 and 3) rat PC-12 cell lysate with HFH-4 antibody. Predicted molecular weight ~55 kDa.



Flow cytometry testing of human HepG2 cells with HFH-4 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= HFH-4 antibody.

Description

HFH-4 antibody targets Forkhead box protein J1, also known as FOXJ1, a nuclear transcription factor that serves as a master regulator of motile ciliogenesis. HFH-4 was the original name assigned to this protein before standardized forkhead box nomenclature was adopted, and it remains widely used in the literature. FOXJ1 is a member of the forkhead box family of transcription factors and is predominantly localized to the nucleus, where it regulates gene expression programs required for the formation and function of motile cilia.

HFH-4 antibody is commonly used to study ciliated epithelial cells in tissues where coordinated ciliary movement is essential for normal physiology. FOXJ1 expression is especially prominent in the respiratory epithelium, ependymal cells lining the brain ventricles, reproductive tract epithelia, and other specialized tissues containing motile cilia. Its expression marks cells committed to a motile ciliated lineage, distinguishing them from cells bearing primary, non-motile cilia.

Functionally, FOXJ1 drives the transcription of genes involved in basal body docking, axoneme assembly, and ciliary motility. By activating these downstream targets, HFH-4 ensures proper development of multiciliated cells and coordinated ciliary beating. Loss or disruption of FOXJ1 expression results in defective ciliogenesis and impaired fluid movement, underscoring its essential role in tissue homeostasis and developmental processes.

HFH-4 antibody is also valuable in disease-related research. Abnormal FOXJ1 expression or function has been associated with primary ciliary dyskinesia, hydrocephalus, chronic respiratory disease, and infertility, all of which arise from dysfunctional motile cilia. In the central nervous system, FOXJ1-positive ependymal cells are critical for cerebrospinal fluid flow, and altered expression has been studied in neurodevelopmental disorders and injury responses.

In cancer research, HFH-4 antibody is used as a lineage and differentiation marker in certain tumors, particularly those with ciliated or ependymal characteristics. FOXJ1 expression can provide insight into tumor origin, cellular differentiation state, and transcriptional regulation in both normal and pathological contexts. Its relatively restricted expression pattern enhances its utility as a specific marker in histological and molecular studies.

At the genomic level, the FOXJ1 gene is located on human chromosome 17 and encodes a protein containing a conserved forkhead DNA-binding domain. This domain enables sequence-specific transcriptional regulation of ciliogenesis-related genes. HFH-4 antibody supports research into these regulatory networks by enabling detection of FOXJ1 expression across tissues, developmental stages, and experimental models relevant to cilia biology and epithelial differentiation.

Application Notes

Optimal dilution of the HFH-4 antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids D27-A405) was used as the immunogen for the HFH-4 antibody.

Storage

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