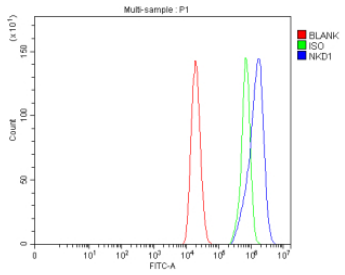
NKD1 Antibody / Naked cuticle 1 (FY12983)

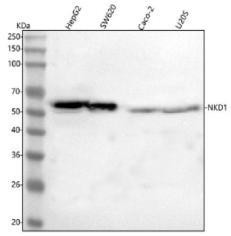
Catalog No.	Formulation	Size
FY12983	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q969G9
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This NKD1 antibody is available for research use only.



Flow Cytometry analysis of Caco-2 cells using anti-NKD1 antibody. Overlay histogram showing Caco-2 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-NKD1 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.



Western blot analysis of NKD1 using anti-NKD1 antibody. Lane 1: human HepG2 whole cell lysates, Lane 2: human SW620 whole cell lysates, Lane 3: human Caco-2 whole cell lysates, Lane 4: human U20S 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-NKD1 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 NKD1 at approximately 52 kDa. The expected molecular weight of NKD1 is ~52 kDa.

Description

NKD1 antibody detects Naked cuticle homolog 1, a cytoplasmic protein that negatively regulates Wnt signaling by antagonizing Dishevelled-mediated pathway activation. The UniProt recommended name is Naked cuticle homolog 1 (NKD1). This protein acts as a feedback inhibitor within the canonical Wnt/Beta-catenin signaling cascade, ensuring controlled gene transcription during embryogenesis, cell proliferation, and tissue differentiation.

Functionally, NKD1 antibody identifies a 471-amino-acid protein localized in the cytoplasm that binds to Dishevelled (DVL) proteins, sequestering them away from the plasma membrane and preventing downstream beta-catenin stabilization. By limiting beta-catenin nuclear translocation, NKD1 represses Wnt target gene expression, balancing cell fate decisions and tissue patterning. NKD1 expression itself is induced by Wnt signaling, creating a negative feedback loop essential for maintaining signaling homeostasis.

The NKD1 gene is located on chromosome 16q12.1 and encodes a conserved protein containing an EF-hand-like calcium-binding motif and a Dishevelled-binding region. It functions in developmental processes such as neural tube formation, axis specification, and organogenesis. In adult tissues, NKD1 continues to modulate Wnt activity to maintain epithelial integrity and stem cell renewal. Loss or silencing of NKD1 leads to excessive Wnt pathway activation, contributing to oncogenesis and abnormal cell proliferation.

In cancer research, NKD1 acts as a tumor suppressor. Reduced NKD1 expression has been observed in colorectal, gastric, and hepatocellular carcinomas, where Wnt hyperactivation drives tumor progression. Restoration of NKD1 expression inhibits beta-catenin accumulation and reduces metastatic potential, highlighting its role as a critical checkpoint in Wnt pathway regulation. Beyond oncology, NKD1 also influences bone formation, neurogenesis, and intestinal regeneration through its modulation of Wnt and planar cell polarity signaling.

NKD1 antibody is widely used in developmental biology, oncology, and cell signaling research. It is suitable for immunoblotting, immunofluorescence, and co-immunoprecipitation to investigate NKD1 expression, localization, and interaction with Wnt signaling components. Detection of NKD1 provides insight into Wnt feedback regulation and its implications in stem cell biology and cancer. In tissue models, NKD1 serves as a molecular marker for Wnt pathway inhibition and differentiation status.

Structurally, NKD1 contains conserved motifs that enable direct binding to DVL proteins and membranes enriched in phosphatidylinositol phosphates. Its function is regulated by phosphorylation and intracellular calcium levels. NSJ Bioreagents provides NKD1 antibody reagents validated for use in Wnt signaling, developmental biology, and cancer pathway research.

Application Notes

Optimal dilution of the NKD1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NKD1 recombinant protein (Position: D21-K368) was used as the immunogen for the NKD1

antibody.

Storage

After reconstitution, the NKD1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.