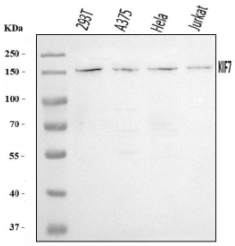
KIF7 Antibody / Kinesin-like protein KIF7 (FY12535)

Catalog No.	Formulation	Size
FY12535	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	Q2M1P5
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This KIF7 antibody is available for research use only.



Western blot analysis of KIF7 using anti-KIF7 antibody. Lane 1: human 293T whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: 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-KIF7 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 KIF7 at approximately 151 kDa. The expected molecular weight of KIF7 is ~151 kDa.

Description

KIF7 antibody detects Kinesin-like protein KIF7, a microtubule-associated motor protein that plays a crucial role in Hedgehog signaling and ciliary function. KIF7 is a member of the kinesin superfamily and acts as a regulator of microtubule dynamics rather than as a transport motor. The KIF7 antibody is commonly used in developmental biology and cilia research to explore signal transduction, cytoskeletal regulation, and morphogenesis.

KIF7 is encoded by the KIF7 gene located on human chromosome 15q26.1. The protein is approximately 151 kilodaltons and contains an N-terminal motor domain, a coiled-coil stalk, and a C-terminal tail region required for signaling complex assembly. KIF7 localizes to the primary cilium and functions as a scaffold controlling the balance between active and repressive forms of the transcription factor GLI in response to Hedgehog pathway activation.

The KIF7 antibody detects a 134 kilodalton protein by western blot and reveals distinct ciliary tip staining by immunofluorescence. KIF7 regulates microtubule stability and controls ciliary length, essential for proper Hedgehog signal transduction. It restrains GLI2 and GLI3 activity by preventing excessive microtubule polymerization at the ciliary tip and recruiting pathway regulators such as SUFU.

Loss-of-function mutations in KIF7 cause ciliopathies, including Joubert syndrome and hydrolethalus syndrome, characterized by brain malformations and defective patterning during embryogenesis. Aberrant KIF7 signaling disrupts tissue polarity and organ development, while partial reduction contributes to tumorigenesis by allowing uncontrolled Hedgehog pathway activation.

KIF7 is an essential modulator of ciliary signaling and structural organization, integrating microtubule mechanics with developmental cues. NSJ Bioreagents provides a validated KIF7 antibody optimized for its applications, enabling detailed investigation of Hedgehog pathway regulation, neuronal patterning, and ciliary function.

Application Notes

Optimal dilution of the KIF7 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human KIF7 was used as the immunogen for the KIF7 antibody.

Storage

After reconstitution, the KIF7 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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