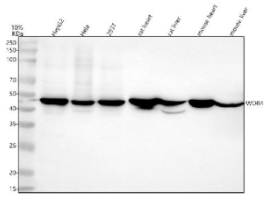
WDR4 Antibody / WD repeat domain 4 [clone 25W87] (FY12587)

Catalog No.	Formulation	Size
FY12587	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

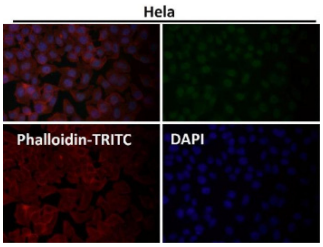
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	25W87
Purity	Affinity-chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P57081
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry: 5ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This WDR4 antibody is available for research use only.



Western blot analysis of WDR4 using anti-WDR4 antibody. Lane 1: human HepG2 whole cell lysates, Lane 2: human Hela whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: rat heart tissue lysates, Lane 5: rat liver tissue lysates, Lane 6: mouse heart tissue lysates, Lane 7: mouse liver tissue 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-WDR4 antibody at 1:500 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 1:500 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for WDR4 at approximately 45 kDa. The expected molecular weight of WDR4 is ~45 kDa.



Immunofluorescent analysis using the WDR4 antibody at 1:50 dilution.

Description

WDR4 antibody detects WD repeat domain 4, a conserved protein involved in RNA modification and tRNA methylation. WDR4 forms a complex with METTL1 to catalyze the N7-methylguanosine modification of tRNAs, a modification required for translational fidelity and RNA stability. The WDR4 antibody is widely used in molecular biology and RNA research to study RNA methylation, protein translation, and gene expression regulation.

WDR4 is encoded by the WDR4 gene located on human chromosome 21q22.3. The protein is approximately 412 amino acids long and contains several WD40 repeats that mediate protein-protein interactions, forming a beta-propeller structure typical of the WD repeat family. WDR4 localizes to the nucleus and cytoplasm, where it partners with METTL1 to catalyze methylation of specific tRNA guanine residues, ensuring proper translation initiation and elongation.

The WDR4 antibody detects a 46 kilodalton protein by western blot and demonstrates nuclear and cytoplasmic staining patterns under immunofluorescence. Through its interaction with METTL1, WDR4 stabilizes the tRNA methyltransferase complex and regulates global protein synthesis. Loss of WDR4 leads to reduced tRNA methylation, impaired translation, and increased sensitivity to stress.

Mutations in WDR4 cause a spectrum of developmental and neurological disorders, including microcephaly and intellectual disability. These defects arise from disrupted tRNA modification, which affects the translation of growth-related and neuronal genes. In cancer, overexpression of WDR4 enhances translation of oncogenic proteins and promotes tumor progression through metabolic reprogramming.

Because of its key role in RNA modification and translation regulation, WDR4 serves as an essential model for understanding epitranscriptomic control of gene expression. NSJ Bioreagents provides a validated WDR4 antibody optimized for its applications, supporting studies of RNA methylation, translational regulation, and disease pathogenesis.

Application Notes

Optimal dilution of the WDR4 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human WDR4 was used as the immunogen for the WDR4 antibody.

Storage

Store the WDR4 antibody at -20oC.

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