abcam

ab169526

Anti-WDR4 antibody [EPR11052]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR11052
Purification technique	Affinity purification Protein A
Concentration	1.026 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	For unpurified use at 1/10000 - 1/50000.

IHC-P

Tested

Species	Human
Dilution info	1/1000
Notes	For unpurified use at 1/250 - 1/500. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Human
Dilution info	1/50 - 1/2000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information WDR4

Function

Non-catalytic component of the METTL1-WDR4 methyltransferase complex required for the formation of N(7)-methylguanine in a subset of RNA species, such as tRNAs, mRNAs and microRNAs (miRNAs) (PubMed:12403464, PubMed:31031083, PubMed:31031084, PubMed:36599982, PubMed:36599985, PubMed:37369656). In the METTL1-WDR4 methyltransferase complex, WDR4 acts as a scaffold for tRNA-binding (PubMed:36599982, PubMed:36599985, PubMed:37369656). Required for the formation of N(7)-methylguanine at position 46 (m7G46) in a large subset of tRNAs that contain the 5'-RAGGU-3' motif within the variable loop (PubMed:12403464, PubMed:34352206, PubMed:34352207, PubMed:36599982, PubMed:36599985, PubMed:37369656). M7G46 interacts with C13-G22 in the D-loop to stabilize tRNA tertiary structure and protect tRNAs from decay (PubMed:36599982, PubMed:36599985). Also required for the formation of N(7)-methylguanine at internal sites in a subset of mRNAs (PubMed:31031084,

PubMed:37379838). Also required for methylation of a specific subset of miRNAs, such as let-7 (PubMed:31031083). Independently of METTL1, also plays a role in genome stability: localizes at the DNA replication site and regulates endonucleolytic activities of FEN1 (PubMed:26751069).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The WDR4 protein also known as WD repeat domain 4 functions in the modification of ribonucleic acids. It specifically takes part in the methylation process of N(7)-methylguanine-tRNA (m7G46) where it serves as an important component of the tRNA methyltransferase complex. With an approximate mass of 51 kDa WDR4 shows expression in various tissues throughout the human body contributing to fundamental cellular processes.

Biological function summary	WDR4 plays a role in the maintenance of accurate protein synthesis. It contributes to the stabilization and correct folding of tRNA molecules which are essential for the translation of genetic information from mRNA to proteins. As part of the tRNA methyltransferase complex WDR4 interacts with the METTL1 enzyme highlighting its involvement in precise tRNA modification processes critical for cellular function and proliferation.
Pathways	The function of WDR4 integrates into the broader landscape of the RNA modification pathway. This pathway is tied to the regulation of gene expression and cellular homeostasis. WDR4's activity impacts the efficiency and fidelity of the translation pathway. In this context WDR4 works closely with METTL1 enhancing the stability and functional capacity of tRNA during protein synthesis which is pivotal for the correct transmission of genetic code within cells.
Associated diseases and disorders	WDR4's malfunction or altered expression associates with several conditions including microcephalic primordial dwarfism where its disruption affects brain development and growth. The protein interacts with METTL1 implicated in the same disorder demonstrating the importance of their coordinated function. Additionally alterations in WDR4 expression might link to certain types of cancers where aberrant tRNA methylation affects tumor growth and progression indicating the potential for WDR4 as a therapeutic target.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

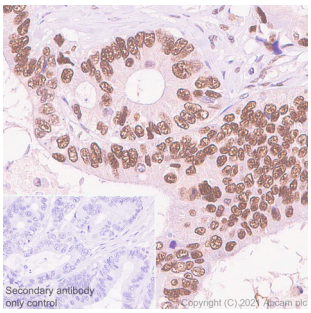
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

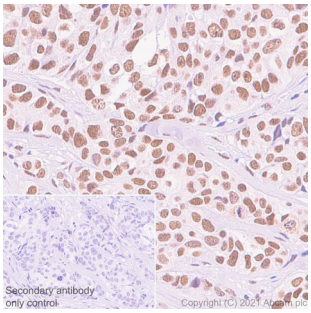
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-WDR4 antibody [EPR11052] (ab169526)

WDR4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-WDR4 antibody

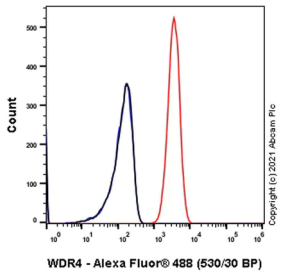
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human prostatic hyperplasia tissue sections labeling WDR4 with purified ab169526 at 1:1000 (1.026 µg/ml). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 1 (pH 6.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used. PBS instead of the primary antibody was used as the negative control. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-WDR4 antibody [EPR11052] (ab169526)

WDR4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-WDR4 antibody

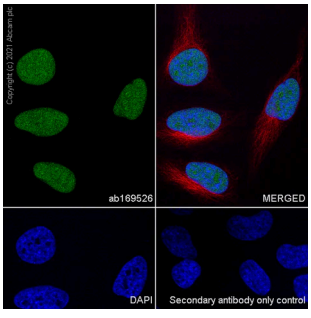
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast carcinoma tissue sections labeling WDR4 with purified ab169526 at 1:1000 (1.026 µg/ml). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 1 (pH 6.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used. PBS instead of the primary antibody was used as the negative control. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Flow Cytometry (Intracellular) - Anti-WDR4 antibody [EPR11052] (ab169526)

WDR4 Flow Cytometry (Intracellular) staining using rabbit Anti-WDR4 antibody

Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling WDR4 with purified ab169526 at 1/100 dilution (10 µg/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150081) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (black). Unlabelled control - Cell without incubation with primary antibody and secondary antibody (blue).

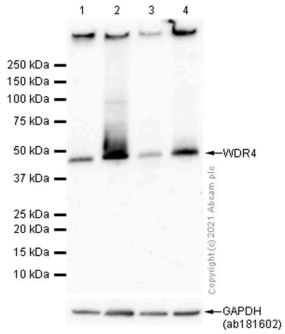


Immunocytochemistry/ Immunofluorescence - Anti-WDR4 antibody [EPR11052] (ab169526)

WDR4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-WDR4 antibody

Immunocytochemistry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling WDR4 with purified ab169526 at 1:100 dilution (10.2 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution (2.5 µg/ml) (ab195889) (red). Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the

secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as a nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Western blot - Anti-WDR4 antibody [EPR11052] (ab169526)

WDR4 Western blot staining using rabbit Anti-WDR4 antibody

All lanes:
Western blot - Anti-WDR4 antibody [EPR11052] (ab169526) at 1/1000 dilution

Lane 1:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
A549 (Human lung carcinoma epithelial cell) whole cell lysate at 20 µg

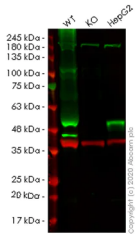
Lane 4:
MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 45 kDa

Observed band size: 45 kDa



Western blot - Anti-WDR4 antibody [EPR11052] (ab169526)

WDR4 Western blot staining using rabbit Anti-WDR4 antibody

Lanes 1-3: Merged signal (red and green). Green - ab169526 observed at 49 kDa. Red - loading control ab8245 observed at 36 kDa.
ab169526 Anti-WDR4 antibody [EPR11052] was shown to specifically react with WDR4 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab265109 (knockout cell lysate ab258285) was used. Wild-type and WDR4 knockout samples were subjected to SDS-PAGE. ab169526 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-WDR4 antibody [EPR11052] (ab169526) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
WDR4 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human WDR4 knockout HeLa cell line (ab265109)

Lane 3:

HepG2 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 45 kDa

Observed band size: 49 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.