abcam

ab312848

Anti-DR4 antibody [EPR28152-57]

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	EPR28152-57
Purification technique	Affinity purification Protein A
Specificity	This antibody does not cross react with DR5 and DcR2.
Concentration	0.486 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information TNFRSF10A

Function	Receptor for the cytotoxic ligand TNFSF10/TRAIL (PubMed:26457518, PubMed:38532423). The adapter molecule FADD recruits caspase-8 to the activated receptor. The resulting death-inducing signaling complex (DISC) performs caspase-8 proteolytic activation which initiates the subsequent cascade of caspases (aspartate-specific cysteine proteases) mediating apoptosis (PubMed:19090789). Promotes the activation of NF-kappa-B (PubMed:9430227).

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	DR4 also known as TRAIL-R1 is a receptor with a molecular weight of approximately 60 kDa. It is part of the tumor necrosis factor receptor (TNFR) superfamily. DR4 is widely expressed in various types of tissues such as the liver spleen thymus and peripheral blood leukocytes. It functions mechanically by binding to its ligand TNF-related apoptosis-inducing ligand (TRAIL) which initiates signaling cascades that lead to apoptosis or programmed cell death.
Biological function summary	The death receptor 4 plays an important role in mediating cell apoptosis. Upon ligand binding DR4 interacts with the adapter molecule FADD (FAS-associated protein with death domain) facilitating the formation of the death-inducing signaling complex (DISC). This complex recruits and activates caspase-8 which eventually leads to the activation of the downstream effector caspases driving the cell towards apoptosis. DR4 operates as a significant component of the extrinsic pathway of apoptosis a process important for maintaining cellular homeostasis and eliminating harmful cells.
Pathways	DR4 functions critically within the extrinsic apoptotic pathway. This pathway involves other death receptors such as DR5 which also binds TRAIL similarly leading to apoptosis through DISC formation and caspase activation. The extrinsic pathway interconnects with the intrinsic pathway via the mitochondria with proteins like Bid acting as a bridge between them. The engagement of these pathways highlights DR4’s importance in regulatory mechanisms of cell death tightly controlling cellular proliferation and survival.
Associated diseases and disorders	DR4 plays a significant role in cancer and autoimmune diseases. Alterations in DR4 expression or function can lead to evasion of apoptosis by cancer cells contributing to tumor progression. The defective apoptotic signaling via DR4 is also linked to autoimmune disorders where insufficient apoptosis may allow for the survival of autoreactive immune cells. In both scenarios DR4's involvement usually associates with its counterpart DR5 as they share similar ligand-binding properties and signal transduction mechanisms in diseased states.

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.

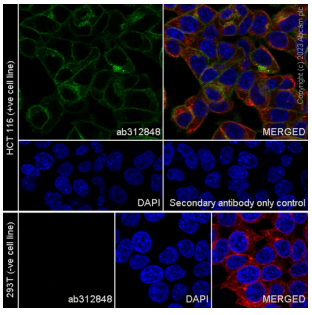
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

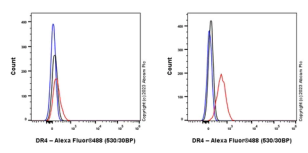
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5 product images



Immunocytochemistry/ Immunofluorescence - Anti-DR4 antibody [EPR28152-57] (ab312848)

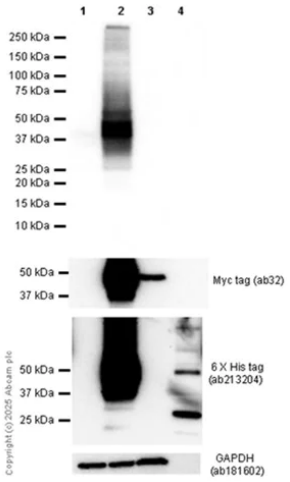
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HCT 116 (human colorectal carcinoma epithelial cell) cells labelling DR4 with ab312848 at 1/50 (9.72 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green). Confocal image showing membranous and weak cytoplasmic staining in HCT 116 cell line. Negative control: 293T. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.



Flow Cytometry (Intracellular) - Anti-DR4 antibody [EPR28152-57] (ab312848)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized TNFRSF10A (DR4) knockout HeLa line (Left) / Parental HeLa cell line (Right) cells labelling DR4 with ab312848 at 1/500 dilution (0.1 ug)/Red (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black)

isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Western blot - Anti-DR4 antibody [EPR28152-57] (ab312848)

DR4 Western blot staining using rabbit Anti-DR4 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/1000000 dilution.

In Western blot, Anti-Myc tag antibody [9E10] - Loading Control (ab32) staining at 1/10000 dilution.

In Western blot, Anti-6X His tag® antibody [EPR20547] - Loading Control (ab213204) staining at 1/10000 dilution.

This antibody does not cross react with DR5 and DcR2.

All lanes:
Western blot - Anti-DR4 antibody [EPR28152-57] (ab312848) at 1/1000 dilution

Lane 1:
293T (Human embryonic kidney epithelial cell) transfected with an empty vector (vector control), containing a myc-His- tag® whole cell lysate at 20 µg

Lane 2:
293T transfected with human DR4 expression vector containing a myc- His-tag®, whole cell lysate at 20 µg

Lane 3:
293T transfected with human DcR2 expression vector containing a myc- His-tag®, whole cell lysate at 48 µg

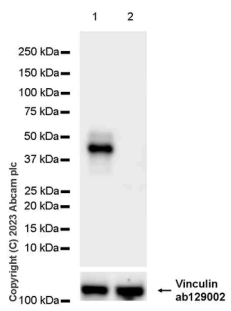
Lane 4:
Recombinant human DR5 fragment protein containing a His-tag®, whole cell lysate at 10 ng

Secondary

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

Observed band size: 48 kDa

Exposure time: 3s



Western blot - Anti-DR4 antibody [EPR28152-57] (ab312848)

DR4 Western blot staining using rabbit Anti-DR4 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST Performed under reducing conditions. In Western blot, ab312848 was shown to bind specifically to TNFRSF10A (DR4). A band was observed at 45 kDa in wild-type Hela cell lysates whereas loss of signal was observed in the TNFRSF10A (DR4) knockout cell line ab264687 (knockout cell lysate ab258726). In Western blot, anti- Vinculin antibody (ab129002) loading control staining at 1/10000 dilution. Exposure time: 15 seconds
All lanes:
Western blot - Anti-DR4 antibody [EPR28152-57] (ab312848) at 1/1000 dilution

Lane 1:
Wild-type HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 50 µg

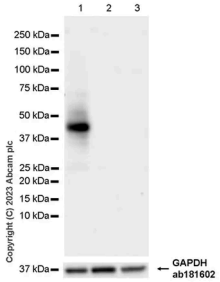
Lane 2:
Western blot - Human TNFRSF10A (DR4) knockout HeLa cell lysate (ab258726) at 50 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 45 kDa

Exposure time: 15s



Western blot - Anti-DR4 antibody [EPR28152-57] (ab312848)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Negative control: 293T, Fadu. In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution.
Exposure time: 15 seconds
All lanes:
Western blot - Anti-DR4 antibody [EPR28152-57] (ab312848) at 1/1000 dilution

Lane 1:
HCT 116 (human colorectal carcinoma epithelial cell) whole cell lysate at 50 µg

Lane 2:
Fadu (human pharyeal carcinoma epithelial cell) whole cell lysate at 50 µg

Lane 3:
293T (human embryonic kidney epithelial cell) whole cell lysate at 50 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 45 kDa

Exposure time: 15s

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