abcam

ab315907

Anti-B7-H3/CD276 antibody [RM2041]

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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM2041
Purification technique	Affinity purification Protein A
Concentration	0.501 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	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/5000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/200
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information B7-H3/CD276

Function	Modulates T-cell-mediated immune responses and the development of acute and chronic transplant rejection. Plays a positive regulatory role in bone formation and has a dual role in the bone-immune interface. Induces antitumor immunity as it activates both acquired and innate immunity leading to natural killer cell and CD8 T-cell dependent killing of tumor cells.

Storage

Shipped at conditions	Blue Ice
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

What are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

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.

Supplementary info

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

Activity summary	CD276 also known as B7-H3 is an immunoregulatory protein with a mass of approximately 57 kDa although post-translational modifications can increase its observed size. It is a member of the B7 family which is part of the immunoglobulin

	superfamily. CD276 is widely expressed in various tissues including placenta liver heart and also in many tumor cells. It is observed in lesser amounts in normal tissues making it an interesting target for cancer research. Various assays like HEK293 and HEK293T cell confluency studies often use CD276 to explore its expression under different conditions and seeding densities which are represented in confluency charts.
Biological function summary	CD276 modulates immune responses by acting as a co-inhibitory ligand impacting T-cell proliferation and cytokine synthesis. Not part of a known complex it plays a role in the adaptive immune system by providing negative feedback regulation that can inhibit the immune response. This capability has implications in preventing autoimmunity but may also contribute to tumor immune evasion by reducing effective anti-tumor responses. The B7-H3/CD276 interaction with receptors such as IL receptor family members suggests its diverse immunomodulatory functions.
Pathways	CD276 participates in the T-cell receptor (TCR) signaling pathways influencing immune checkpoint pathways. It interacts with other immune checkpoint proteins like PD-L1 and CTLA-4 but its exact receptor partner remains unidentified. The presence of CD276 in these pathways highlights its role in controlling T-cell activation and tolerance. By modulating TCR signals and impacting downstream effects CD276 serves as a regulatory point that can balance immune activation and inhibition critical in immune-mediated conditions.
Associated diseases and disorders	CD276 has strong associations with cancer particularly in solid tumors such as prostate and breast cancer. It is often overexpressed in malignant tissues contributing to immune evasion by tumors. Researchers propose it as a potential target for cancer immunotherapy due to this attribute. CD276's link to disorders like asthma has also been suggested where its interaction with proteins involved in inflammatory pathways such as IL response elements can exacerbate the condition. This implicates it as a dual-role protein in both disease progression and potential therapeutic targeting.

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

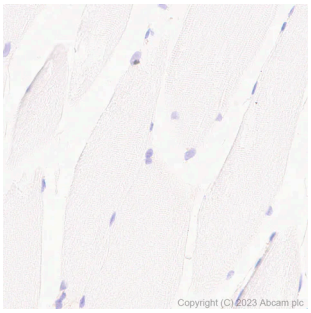
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human skeletal muscle using rabbit Anti-B7-H3/CD276 antibody

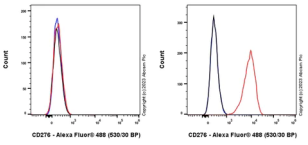
Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue labeling CD276 with ab315907 at 1/200 (2.505 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Low expression: no staining on human skeletal muscle. The section was incubated with ab315907 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



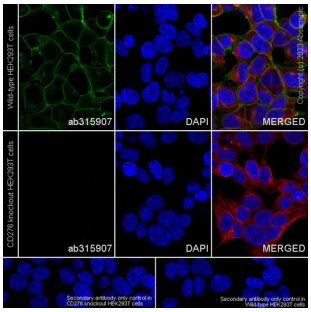
Flow Cytometry - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Flow Cytometry staining using rabbit Anti-B7-H3/CD276 antibody

Flow cytometric analysis of CD276 KO HEK293T (human CD276 knockout embryonic kidney epithelial cell, Left) / Parental HEK293T(Right) cells labelling CD276 with ab315907 at 1/5000 dilution (0.01 ug)/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).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

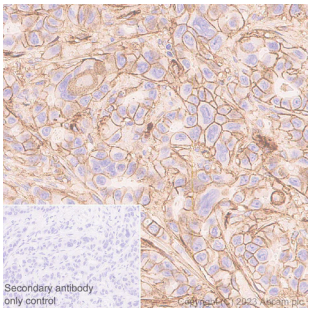
B7-H3/CD276 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-B7-H3/CD276 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized CD276 KO HEK293T (CD276 knockout human embryonic kidney epithelial cell) cells labelling CD276 with ab315907 at 1/100 (5.01 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 staining in parental HEK293T cells, and no staining in CD276 KO HEK293T cells. 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human breast carcinoma using rabbit Anti-B7-H3/CD276 antibody

Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labeling CD276 with ab315907 at 1/200 (2.505 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

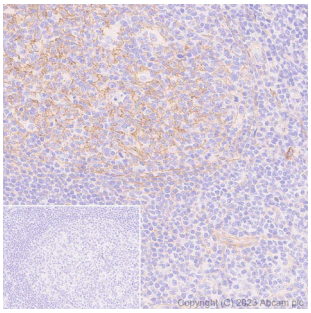
Positive staining on human breast carcinoma. The section was incubated with ab315907 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human tonsil using rabbit Anti-B7-H3/CD276 antibody

Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling CD276 with ab315907 at 1/200 (2.505 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

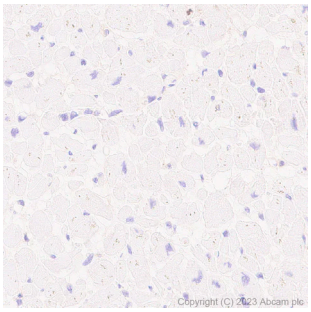
Positive staining on human tonsil. The section was incubated with ab315907 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cardiac muscle using rabbit Anti-B7-H3/CD276 antibody

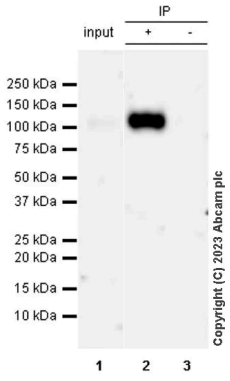
Immunohistochemical analysis of paraffin-embedded Human cardiac muscle tissue labeling CD276 with ab315907 at 1/200 (2.505 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on human cardiac muscle. The section was incubated with ab315907 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunoprecipitation - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

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

CD276 was immunoprecipitated from 0.35 mg 293T (human embryonic kidney epithelial cell) whole cell lysate with ab315907 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab315907 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: 293T (human embryonic kidney epithelial cell) whole cell lysate
Lane 2: ab315907 IP in 293T (human embryonic kidney epithelial cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab315907 in 293T whole cell lysate

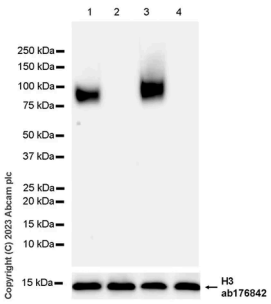
All lanes:
Immunoprecipitation - Anti-B7-H3/CD276 antibody [RM2041] (ab315907) at 1/30 dilution

All lanes:
293T (human embryonic kidney epithelial cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Exposure time: 84s



Western blot - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Western blot staining using rabbit Anti-B7-H3/CD276 antibody

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

In Western blot, ab315907 was shown to bind specifically to CD276.

Target of interest was observed at 90 KD in wild-type HEK293T cell lysates with no signal observed at this size in CD276 knockout cell line (lane 2, knockout cell line ab266658/ knockout cell lysate ab257097).

Lysates were freshly made, non-boiled and used immediately to minimize protein degradation.

In Western blot, Anti-Histone H3 antibody [EPR16987] - Nuclear Marker and ChIP Grade (ab176842) staining at 1/100000 dilution.

All lanes:
Western blot - Anti-B7-H3/CD276 antibody [RM2041] (ab315907) at 1/1000 dilution

Lane 1:
Wild-type HEK293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
CD276 knockout HEK293T whole cell lysate at 20 µg

Lane 3:
LNCaP (human prostate carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
Raji (human Burkitts lymphoma B lymphocyte) whole cell lysate at 20 µg

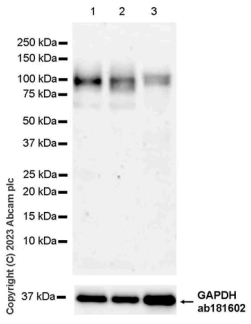
Secondary

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

Performed under reducing conditions.

Observed band size: 90 kDa, 15 kDa

Exposure time: 37s



Western blot - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Western blot staining using rabbit Anti-B7-H3/CD276 antibody

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

Low expression: skeletal muscle(PMID:36756390, PMID:35476450)

Samples are non-boiled as boiling may cause protein aggregation.

The identity of the lower MW bands in lane 1 and 2 are unknown.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:

Western blot - Anti-B7-H3/CD276 antibody [RM2041] (ab315907) at 1/1000 dilution

Lane 1:
Human lung tissue lysate at 20 µg

Lane 2:
Human placenta tissue lysate at 20 µg

Lane 3:
Human skeletal muscle tissue lysate at 20 µg

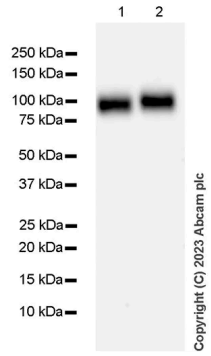
Secondary

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

Developed using the ECL technique.

Observed band size: 90 kDa, 36 kDa

Exposure time: 3s



Western blot - Anti-B7-H3/CD276 antibody [RM2041] (ab315907)

B7-H3/CD276 Western blot staining using rabbit Anti-B7-H3/CD276 antibody

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

Lysates were freshly made, non-boiled and used immediately to minimize protein degradation.

All lanes:
Western blot - Anti-B7-H3/CD276 antibody [RM2041] (ab315907) at 1/1000 dilution

Lane 1:
HeLa (human epithelial cell line from cervical adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
293T (human embryonic kidney 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

Observed band size: 90 kDa

Exposure time: 37s

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