abcam

ab307737

Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR28145-53
Purification technique	Affinity purification Protein A
Concentration	1.027 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	Observed molecular weight may vary depending on the glycosylation level of the target.

Species	Mouse
Dilution info	-
Notes	Observed molecular weight may vary depending on the glycosylation level of the target.

Species	Rat
Dilution info	-
Notes	Observed molecular weight may vary depending on the glycosylation level of the target.

ICC/IF

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information THY1

Function	May play a role in cell-cell or cell-ligand interactions during synaptogenesis and other events in the brain.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	CD90 also known as Thy1 is a glycoprotein with a molecular mass of approximately 25-37 kDa. It is highly conserved across species and found on the surface of various cell types including fibroblasts neurons and endothelial cells. CD90 is expressed in these cells in tissues such as the brain thymus and lungs. Researchers use anti-CD90 antibodies for detection often in combination with CD90 FITC in immunofluorescence assays. CD90 serves as a useful cell marker particularly in identifying mesenchymal stem cells (MSCs).
Biological function summary	CD90 plays a role in cell-cell and cell-matrix interactions contributing to cellular adhesion migration and signal transduction. It functions as part of a complex involving integrins which mediate its interaction with the extracellular matrix. This protein also influences T-cell activation reflecting its importance in immune response regulation. Its presence aids in modulating response to injury and promoting tissue repair due to its association with stem and progenitor cells.
Pathways	CD90 engagement affects focal adhesion and MAPK signaling pathways. It interacts with integrins like αvβ3 and α5β1 influencing cell movement and proliferation processes. CD90 involvement in these pathways allows it to regulate responses important for cell survival and communication within various tissues. These interactions highlight the protein's role in maintaining cellular homeostasis and regulating physiological processes.
Associated diseases and disorders	CD90 has associations with fibrosis and cancer. In fibrotic conditions CD90 expression affects fibroblast activity influencing tissue scarring in organs such as the liver and lungs. In cancer CD90 modifies tumor progression and metastasis by impacting cell adhesion and migration with connections to proteins like TGF-beta which further drive these processes. Understanding CD90 in disease contexts facilitates the development of therapeutic strategies aimed at modulating its activity.

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.

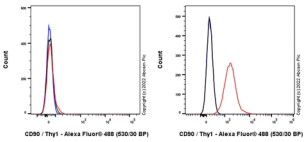
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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11 product images



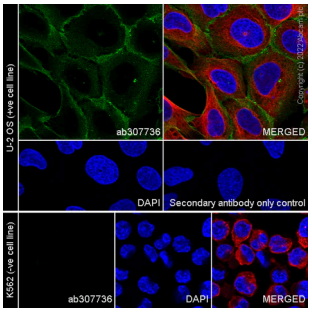
Flow Cytometry - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

CD90 / Thy1 Flow Cytometry staining using rabbit Anti-CD90 / Thy1 antibody

This data was developed using ab307736, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of K-562 (human chronic myelogenous leukemia lymphoblast) (Left panel) compared to U-2 OS (human bone osteosarcoma epithelial cell) (Right panel) labeling CD90 / Thy1 with ab307736 at 1/500 dilution (0.1 µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.

Negative control: K-562.

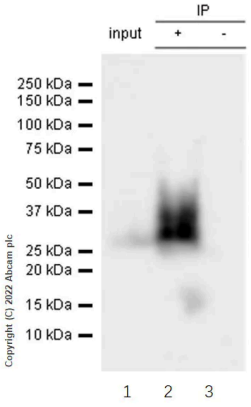
Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

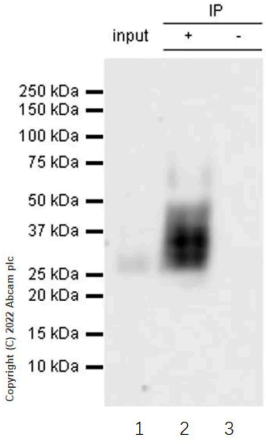
CD90 / Thy1 Immunocytochemistry/ Immunofluorescence staining of U-2 OS (human bone osteosarcoma epithelial cell) using rabbit Anti-CD90 / Thy1 antibody

This data was developed using ab307736, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized U-2 OS (human bone osteosarcoma epithelial cell) cells labeling CD90 / Thy1 with ab307736 at 1/250 dilution (1.8 µg/ml) followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 µg/ml) (Green). Confocal image showing membranous and cytoplasmic staining in U-2 OS cell line, no staining was observed in K-562 cell line. Negative control: K-562 (PMID: 7683034). 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 dilution (2.5 µg/ml) (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 dilution (2 µg/ml).



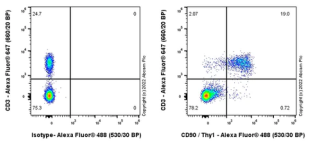
Immunoprecipitation - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

This data was produced using ab307736 the same antibody clone but in a different buffer. CD90 / Thy1 was immunoprecipitated from 0.35 mg U-2 OS (human bone osteosarcoma epithelial cell) whole cell lysate 10 µg with ab307736 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307736 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: U-2 OS whole cell lysate 10 µg Lane 2: ab307736 IP in U-2 OS whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307736 in HU-2 OS whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 15 seconds. The molecular weight observed is consistent with what has been described in the literature (PMID: 16770003) and due to the high glycosylation of the protein.



Immunoprecipitation - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

This data was produced using ab307736 the same antibody clone but in a different buffer. CD90 / Thy1 was immunoprecipitated from 0.35 mg HuT-78 (human sezary syndrome cutaneous t lymphocyte) whole cell lysate 10 µg with ab307736 at 1/30 dilution (2 µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab307736 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HuT-78 whole cell lysate 10 µg Lane 2: ab307736 IP in HuT-78 whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab307736 in HuT-78 whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 15 seconds. The molecular weight observed is consistent with what has been described in the literature (PMID: 16770003) and due to the high glycosylation of the protein.



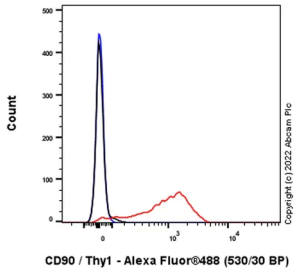
Flow Cytometry - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

CD90 / Thy1 Flow Cytometry staining of Mouse peripheral blood mononuclear cell (PBMC) using rabbit Anti-CD90 / Thy1 antibody

This data was developed using ab307736, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of Rabbit monoclonal IgG isotype control (ab172730) (Left panel) compared to mouse peripheral blood mononuclear cell (PBMC) (Right panel) labeling CD90 / Thy1 with ab307736 at 1/500 dilution (0.1 µg). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.

Cells were stained with rabbit IgG or ab307736 then stained with anti-CD3 conjugated to Alexa Fluor® 647.

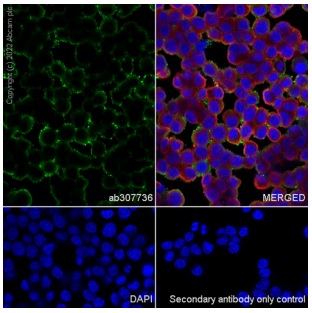
Gated on viable cells.



Flow Cytometry - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

CD90 / Thy1 Flow Cytometry staining of PC-12 (rat adrenal gland pheochromocytoma) using rabbit Anti-CD90 / Thy1 antibody

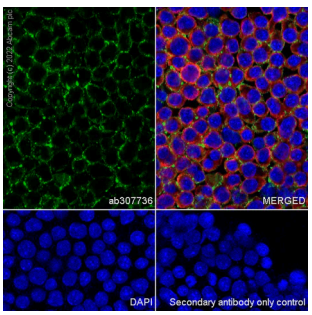
This data was developed using ab307736, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of PC-12 (rat adrenal gland pheochromocytoma) cells labeling CD90 / Thy1 with ab307736 at 1/500 dilution (0.1µg) (Red) compared with a Rabbit monoclonal IgG isotype control (ab172730) (Black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

CD90 / Thy1 Immunocytochemistry/ Immunofluorescence staining of PC-12 (rat adrenal gland pheochromocytoma small irregularly shaped cells) using rabbit Anti-CD90 / Thy1 antibody

This data was developed using ab307736, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized PC-12 (rat adrenal gland pheochromocytoma small irregularly shaped cells) cells labeling CD90 / Thy1 with ab307736 at 1/250 dilution (1.8 µg/ml) followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 µg/ml) (Green). Confocal image showing membranous and cytoplasmic staining in PC-12 cell line. 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 dilution (2.5 µg/ml) (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 dilution (2 µg/ml).

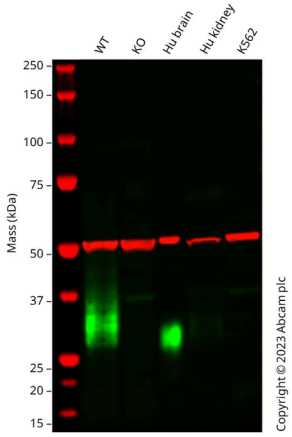


Immunocytochemistry/ Immunofluorescence - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

CD90 / Thy1 Immunocytochemistry/ Immunofluorescence staining of EL4 (mouse lymphoma T lymphocyte) using rabbit Anti-CD90 / Thy1 antibody

This data was developed using ab307736, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized EL4 (mouse lymphoma T lymphocyte) cells labeling CD90 / Thy1 with ab307736 at

1/250 dilution (1.8 µg/ml) followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 µg/ml) (Green). Confocal image showing membranous and cytoplasmic staining in EL4 cell line. 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 dilution (2.5 µg/ml) (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 dilution (2 µg/ml).



Western blot - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab307736). Western blot: Anti-THY1 antibody [EPR28145-53] (ab307736) staining at 1/5000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab307736 was shown to bind specifically to THY1. A band was observed at 25-37 kDa in wild-type U-2 OS cell lysates with no signal observed at this size in THY1 knockout cell line ab262490 (knockout cell lysate ab263925). To generate this image, wild-type and THY1 knockout U-2 OS cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-CD90 / Thy1 antibody [EPR28145-53] (ab307736) at 1/5000 dilution

Lane 1:
Wild-type U-2 OS cell lysate at 30 µg

Lane 2:
Western blot - Human THY1 (CD90) knockout U-2 OS cell lysate (ab263925)

Lane 2:
Western blot - Human THY1 (CD90) knockout U-2 OS cell line (ab262490)

Lane 2:
THY1 knockout U-2 OS cell lysate at 30 µg

Lane 3:
Human brain cell lysate at 2 µg

Lane 4:
Human kidney cell lysate at 20 µg

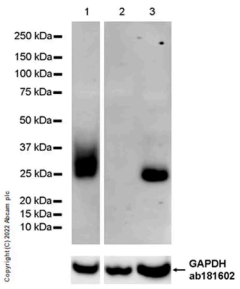
Lane 5:
K562 cell lysate at 30 µg

Secondary

All lanes:
Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 17 kDa



Western blot - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

This data was developed using 307736, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: Negative control: K-562 (PMID: 7683034). The molecular weight observed is consistent with what has been described in the literature (PMID: 16770003). In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200, 000 dilution.This blot was developed using a high sensitivity ECL substrate Exposure time:103 seconds
All lanes:
Western blot at 1/1000 dilution

Lane 1:
U-2 OS (human bone osteosarcoma epithelial cell) whole cell lysate

Lane 2:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate

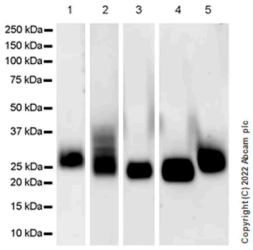
Lane 3:
EL4 (mouse lymphoma t lymphocyte) whole cell lysate

Secondary

All lanes:
Western blot at 1/2000 dilution

Observed band size: 25 kDa, 37 kDa

Exposure time: 103s



Western blot - Anti-CD90 / Thy1 antibody [EPR28145-53] - BSA and Azide free (ab307737)

This data was developed using 307736, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST. The molecular weight observed is consistent with what has been described in the literature (PMID: 16770003) and due to the highglycosylation of the protein. Exposure time: 48 seconds.
All lanes:
Western blot - Anti-CD90 / Thy1 antibody [EPR28145-53] (ab307736) at 1/1000 dilution

Lane 1:
Human spleen tissue lysate at 20 µg

Lane 2:
HuT-78 (human sezary syndrome cutaneous t lymphocyte) whole cell lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Rat brain tissue lysate at 20 µg

Lane 5:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 25 kDa, 37 kDa

Exposure time: 48s

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