abcam

ab227046

Anti-galectin 9/Gal-9 antibody [EPR22214]

Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046) is a rabbit monoclonal antibody detecting galectin 9/Gal-9 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

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	EPR22214
Purification technique	Affinity purification Protein A
Specificity	This antibody is not recommended for mouse and rat in IHC.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/250
Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information LGALS9

Function	Binds galactosides (PubMed:18005988). Has high affinity for the Forssman pentasaccharide (PubMed:18005988). Ligand for HAVCR2/TIM3 (PubMed:16286920). Binding to HAVCR2 induces T-helper type 1 lymphocyte (Th1) death (PubMed:16286920). Also stimulates bactericidal activity in infected macrophages by causing macrophage activation and IL1B secretion which restricts intracellular bacterial growth (By similarity). Ligand for P4HB; the interaction retains P4HB at the cell surface of Th2 T-helper cells, increasing disulfide reductase activity at the plasma membrane, altering the plasma membrane redox state and enhancing cell migration (PubMed:21670307). Ligand for CD44; the interaction enhances binding of SMAD3 to the FOXP3 promoter, leading to up-regulation of FOXP3 expression and increased induced regulatory T (iTreg) cell stability and suppressive function (By similarity). Promotes ability of mesenchymal stromal cells to suppress T-cell proliferation (PubMed:23817958). Expands regulatory T-cells and induces cytotoxic T-cell apoptosis following virus infection (PubMed:20209097). Activates ERK1/2 phosphorylation inducing cytokine (IL-6, IL-8, IL-12) and chemokine (CCL2) production in mast and dendritic cells (PubMed:16116184, PubMed:24465902). Inhibits degranulation and induces apoptosis of mast cells (PubMed:24465902). Induces maturation and migration of dendritic cells (PubMed:16116184, PubMed:25754930). Inhibits natural killer (NK) cell function (PubMed:23408620). Can transform NK cell phenotype from peripheral to decidual during pregnancy (PubMed:25578313). Astrocyte derived galectin-9 enhances microglial TNF production (By similarity). May play a role in thymocyte-epithelial interactions relevant to the biology of the thymus. May provide the molecular basis for urate flux across cell membranes, allowing urate that is formed during purine metabolism to efflux from cells and serving as an electrogenic transporter that plays an important role in renal and gastrointestinal urate excretion (By similarity). Highly selective to the anion urate (By similarity). Isoform 2. Acts as an eosinophil chemoattractant (PubMed:9642261). It also inhibits angiogenesis (PubMed:24333696). Suppresses IFNG production by natural killer cells (By similarity).

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

What is this antibody validated in?
Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of galectin 9/Gal-9?
Anti-galectin 9/Gal-9 [EPR22214] (ab227046) specifically detects a band for galectin 9/Gal-9 (UniProt: O00182) at a molecular weight of 40kDa.

Specificity confirmed
The specificity of Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046) has been confirmed by Western blot testing in LGALS9 Knockout THP-1 cell line, ab269505.

Other related products
We have a range of other formats of antibody clone [EPR22214] also available for your convenience: ab227046, Carrier free - ab243288, Carrier free - ab246797, PE - ab306117, APC - ab306118, HRP - ab306119, Alkaline Phosphatase - ab308677, Alexa Fluor® 488 - ab309646, Alexa Fluor® 647 - ab310012, Alexa Fluor® 594 - ab310379, Alexa Fluor® 555 - ab311904, Alexa Fluor® 568 - ab312375, Alexa Fluor® 750 - ab321429

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	Galectin-9 also known as Gal-9 or LGALS9 is a B-galactoside-binding lectin with a molecular mass of around 40 kDa. It shows expression in various tissues including the thymus spleen and liver. The galectin-9 protein is involved in cell-cell and cell-matrix interactions where it binds to glycoproteins and glycolipids. Researchers commonly use methods like Galectin-9 ELISA to measure its levels in different biological samples.

Biological function summary	Galectins like galectin-9 play essential roles in regulating diverse immune responses. Galectin-9 acts within the immune system by modulating inflammation and apoptosis. It acts as both a pro-apoptotic factor for T cells and a protein mediator in innate immune functions. Galectin-9 proteins can form complexes with other lectins and cell surface receptors contributing to cellular signaling processes.
Pathways	Galectin-9 is integral to the immune system's functional networks. It participates in the T-cell regulation pathways and the innate immunity pathways. In these pathways it interacts with other proteins like TIM-3 which mediates T-cell apoptosis and contributes to immune tolerance. These interaction networks play important roles in maintaining the body's immune homeostasis.
Associated diseases and disorders	Galectin-9 has associations with autoimmune diseases and cancer. Its regulatory effects on T cells connect it to autoimmune conditions where abnormal T-cell activation occurs. In cancer the alteration in galectin-9 expression levels affects tumor immunity. The interaction of galectin-9 with other proteins like TIM-3 is important in cancer progression making it a target of interest for therapeutic interventions.

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

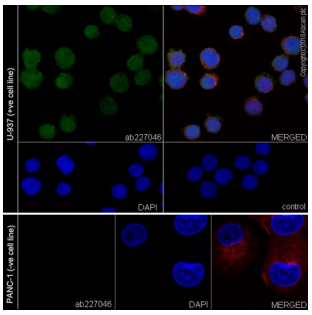
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images

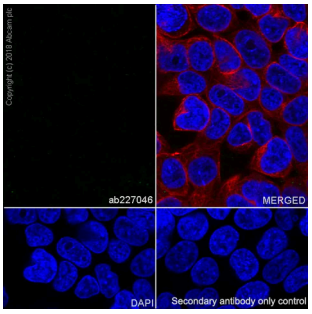


Immunocytochemistry/ Immunofluorescence - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-galectin 9/Gal-9 antibody

Immunocytochemistry analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Cell line U937 (human histiocytic lymphoma cell line) cells labeling galectin 9/Gal-9 with ab227046 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
The nuclear counterstain is DAPI (blue).
Counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at a 1/200 dilution (red).
Confocal image showing nuclear and cytoplasmic staining in U937 cell line.

Negative control: PANC-1.

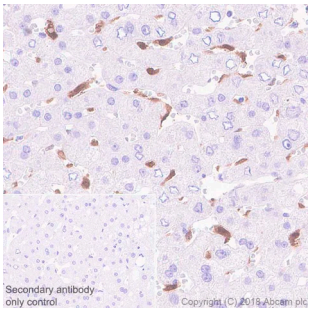


Immunocytochemistry/ Immunofluorescence - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-galectin 9/Gal-9 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293T (human epithelial cell line from embryonic kidney) cells labeling galectin 9/Gal-9 with ab227046 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing no staining in HEK-293T cells

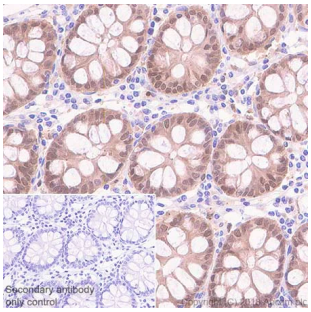
Negative control: HEK-293T (PMID: 11698107). The nuclear counterstain is DAPI (blue).
Counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at a 1/200 dilution (red).
Secondary antibody only control: Used PBS instead of the primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-galectin 9/Gal-9 antibody

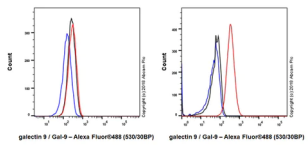
Immunohistochemical analysis of paraffin-embedded human liver tissue labeling galectin 9/Gal-9 with ab227046 at 1/1000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Nuclear and cytoplasmic staining on Kupffer cells of human liver (PMID: 20209097, PMID: 18202194) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-galectin 9/Gal-9 antibody

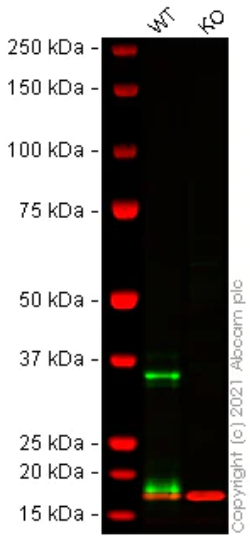
Immunohistochemical analysis of paraffin-embedded human colon tissue labeling galectin 9/Gal-9 with ab227046 at 1/1000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Nuclear and cytoplasmic staining on epithelial cells of human colon (PMID: 18202194) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Flow Cytometry (Intracellular) - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Flow Cytometry (Intracellular) staining using rabbit Anti-galectin 9/Gal-9 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized PANC-1 (human pancreatic epithelial cancinoma cell line) (Left) / U937 (human histiocytic lymphoma cell line) (Right) cell line labeling galectin 9/Gal-9 with ab227046 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.
Negative Control - PANC-1 cells.



Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Western blot staining using rabbit Anti-galectin 9/Gal-9 antibody

Lanes 1 - 2: Merged signal (red and green). Green - ab227046 observed at 35 kDa. Red - loading control Mouse anti Histone H3 observed at 18 kDa.
ab227046 was shown to react with galectin 9/Gal-9 in wild-type THP-1 cells in Western blot with loss of signal observed in LGALS9 knockout cell line ab269505 (knockout cell lysate ab269667). Wild-type THP-1 and LGALS9 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab227046 and Mouse anti Histone H3 overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046) at 1/1000 dilution

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

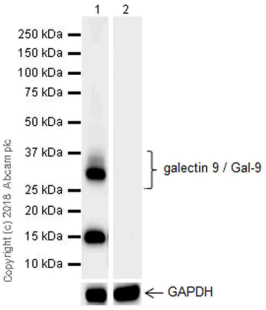
Lane 2:
LGALS9 knockout THP-1 cell lysate at 20 µg

Lane 2:
Western blot - Human Lgals9 (galectin 9/Gal-9) knockout THP-1 cell line (ab269505)

Performed under reducing conditions.

Predicted band size: 40 kDa

Observed band size: 35 kDa



Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Western blot staining using rabbit Anti-galectin 9/Gal-9 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression of the isoforms observed is consistent with what has been described in the literature (PMID 11886844, PMID: 22805533).

Degraded fragments (13-15 kDa) has also been described (PMID: 15811318).

Negative control: HEK-293T (PMID: 24333696).

All lanes:
Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046) at 1/1000 dilution

Lane 1:
THP-1 (human monocytic leukemia monocyte), whole cell lysate at 20 µg

Lane 2:
HEK-293T (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

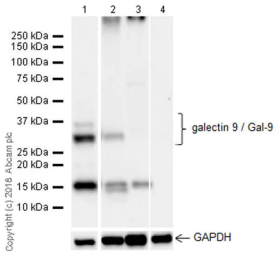
Secondary

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

Predicted band size: 40 kDa

Observed band size: 13-15 kDa, 34-39 kDa

Exposure time: 59s



Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Western blot staining using rabbit Anti-galectin 9/Gal-9 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression of the isoforms observed is consistent with what has been described in the literature (PMID 11886844, PMID: 22805533).

Degraded fragments (13-15 kDa) have also been descried (PMID: 15811318).

Negative control: PANC-1.

All lanes:
Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046) at 1/1000 dilution

Lane 1:
U937 (human histiocytic lymphoma monocyte), whole cell lysate at 20 µg

Lane 2:
HL-60 (human Acute Promyelocytic Leukemia promyeloblast), whole cell lysate at 20 µg

Lane 3:
MOLT-4 (human lymphoblastic leukemia T lymphoblast), whole cell lysate at 20 µg

Lane 4:
PANC-1 (human pancreatic epithelioid carcinoma epithelial cell), whole cell lysate at 20 µg

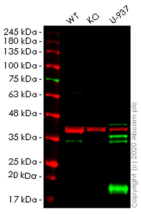
Secondary

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

Predicted band size: 40 kDa

Observed band size: 13-15 kDa, 34-39 kDa

Exposure time: 59s



Western blot - Anti-galectin 9/Gal-9 antibody [EPR22214] (ab227046)

Galectin 9/Gal-9 Western blot staining using rabbit Anti-galectin 9/Gal-9 antibody

Lanes 1-4: Merged signal (red and green). Green - ab227046 observed at 34-39 kDa. Red - loading control ab8245 observed at 36 kDa.
ab227046 Anti-galectin 9/Gal-9 antibody [EPR22214] was shown to specifically react with galectin 9/Gal-9 in wild-type A549 cells. Loss of signal was observed when knockout cell line ab266923 (knockout cell lysate ab256976) was used. Wild-type and galectin 9/Gal-9 knockout samples were subjected to SDS-PAGE. ab227046 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 500 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-galectin 9/Gal-9 antibody [EPR22214] (ab227046) at 1/500 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
Western blot - Human Lgals9 (galectin 9/Gal-9) knockout A549 cell lysate (ab256976) at 20 µg

Lane 3:
U-937 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: 40 kDa

Observed band size: 34-39 kDa

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