abcam

ab315029

Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84]

Recombinant | RabMAb | Advanced Validation | 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	EPR28346-84
Purification technique	Affinity purification Protein A
Concentration	0.494 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

mIHC

Tested

Species	Mouse
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Human, Rat
Dilution info	-
Notes	-

Target data

See full target information Hspg2

Function

Integral component of basement membranes that serve as an attachment substrate for cells, and is involved in multiple processes. Component of the glomerular basement membrane (GBM), responsible for the fixed negative electrostatic membrane charge, and which provides a barrier which is both size- and charge-selective. Plays essential roles in vascularization. Critical for normal heart development and for regulating the vascular response to injury. Also required for avascular cartilage development (By similarity). In muscle, it is essential for localizing acetylcholinesterase (AChE) at the neuromuscular junctions (NMJ), most probably acting as an adapter that links the acetylcholinesterase collagenic tail peptide (COLQ) to alpha-dystroglycan, and is therefore involved in the down-regulation of colinergic synaptic transmission (PubMed:11157973, PubMed:11802174). Endorepellin. Anti-angiogenic and anti-tumor peptide that inhibits endothelial cell migration, collagen-induced endothelial tube morphogenesis and blood vessel growth in the chorioallantoic membrane. Blocks endothelial cell adhesion to fibronectin and type I collagen. Anti-tumor agent in neovascularization. Interaction with its ligand, integrin alpha2/beta1, is required for the anti-angiogenic properties. Evokes a reduction in phosphorylation of receptor tyrosine kinases via alpha2/beta1 integrin-mediated activation of the tyrosine phosphatase, PTPN6 (By similarity). LG3 peptide. Has anti-angiogenic properties that require binding of calcium ions for full activity.

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	Heparan Sulfate Proteoglycan 2 also known as Perlecan is a large multidomain proteoglycan with a mass of over 500 kDa. It contains heparan sulfate chains that contribute to its role in the extracellular matrix. Perlecan is expressed in various tissues including cartilage basement membranes and vascular tissues. It interacts with other matrix proteins providing structural integrity and influencing cell behavior.
Biological function summary	Perlecan plays a critical role in cell adhesion proliferation and growth factor signaling. It is an important component of basement membranes and forms a structural complex with other matrix proteins. Its interaction with heparan sulfate chains enables binding with various ligands such as growth factors and cytokines

	optimizing their availability and functionality at the cell surface. This interaction is essential in tissue maintenance and repair processes.
Pathways	Perlecan participates in the regulation of the Wnt and Hedgehog signaling pathways. These pathways influence key developmental processes and dictate cellular differentiation and migration. Perlecan and its heparan sulfate chains modulate protein interactions within these pathways notably affecting proteins such as Dsh and Ctnnb1 which are essential in signal transduction.
Associated diseases and disorders	Perlecan involvement has been linked with tumorigenesis and cardiovascular diseases. Aberrations in its structure or expression can alter cellular microenvironments impacting key processes like angiogenesis and metastasis. Furthermore its interaction with growth factors can facilitate the progression of diseases like cancer highlighting its connection with proteins such as VEGF and TGF-beta which play major roles in disease modulation.

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

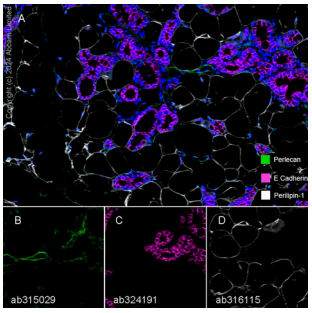
We do not recommend this combination. It is not covered by our product promise.

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



Multiplex immunohistochemistry - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Heparan Sulfate Proteoglycan 2/Perlecan Multiplex immunohistochemistry staining of Mouse breast tissue using rabbit Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded mouse breast tissue staining Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at a 1/100 dilution, ab324191 anti-E Cadherin used at 1/500 dilution and ab316115 anti-Perilipin-1 used at a 1/2000 dilution.
Panel A: merged staining of anti-Perlecan (green; Opal™520), anti-E Cadherin (magenta; Opal™690) and anti-Perilipin-1 (gray; Opal™570) on mouse breast.

Panel B: anti-Perlecan staining endothelium and basement membrane in mouse breast.

Panel C: anti-E Cadherin staining epithelium in mouse breast.

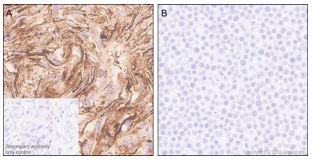
Panel D: anti-Perilipin-1 staining adipocytes in mouse breast.

Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab325029, ab324191 and ab316115 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

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



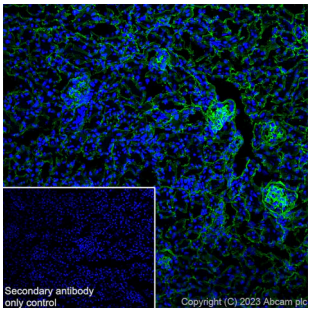
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Immunohistochemical analysis of paraffin-embedded (A) NIH/3T3 (mouse embryonic fibroblast) cell pellets; (B) RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cell pellets. tissue labeling Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at 1/500 (0.988 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on (A) NIH/3T3 (mouse embryonic fibroblast) cell pellets, and no staining on (B) RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cell pellets.The section was incubated with ab315029 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

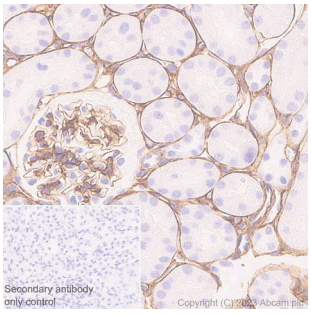


Immunohistochemistry (Frozen sections) - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse kidney (fresh) tissue labeling Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at 1/500 (0.988 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution (Green).

Confocal image showing positive staining on mouse kidney. The nuclear counterstain was DAPI (Blue). The section was incubated with ab315029 for 60 mins at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).The nuclear counterstain was DAPI (Blue).

Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbedat 1/1000 (2 ug/mL) dilution.



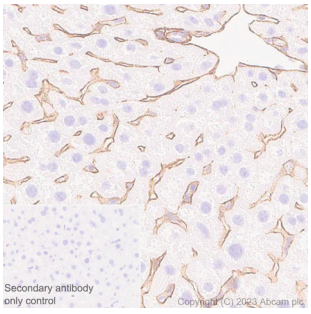
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Immunohistochemical analysis of paraffin-embedded Mouse kidney tissue labeling Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at 1/100 (4.94 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on basement membrane in mouse kidney.The section was incubated with ab315029 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



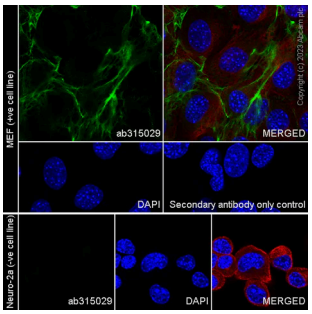
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at 1/100 (4.94 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on basement membrane in mouse liver.The section was incubated with ab315029 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



Immunocytochemistry/ Immunofluorescence - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized MEF (mouse embryo fibroblast) cells labelling Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at 1/2000 (0.247 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).

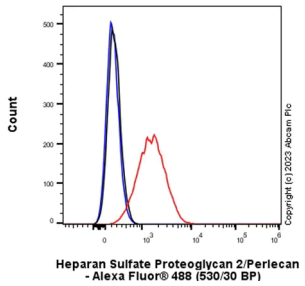
Confocal image showing cytoplasmic staining in MEF cell line.

Negative control: Neuro-2a.

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).

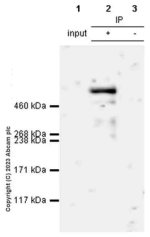
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.



Flow Cytometry (Intracellular) - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized MEF (mouse embryo fibroblast) cells labelling Heparan Sulfate Proteoglycan 2/Perlecan with ab315029 at 1/500 dilution (0.1 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.



Immunoprecipitation - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Heparan Sulfate Proteoglycan 2/Perlecan was immunoprecipitated from 0.35 mg MEF (mouse embryo fibroblast) whole cell fresh lysate with ab315029 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab315029 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: MEF (mouse embryo fibroblast) whole cell fresh lysate

Lane 2: ab315029 IP in MEF (mouse embryo fibroblast) whole cell fresh lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab315029 in MEF whole cell fresh lysate

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

Lysates were made fresh and used immediately to minimize protein degradation.

All lanes:
Immunoprecipitation - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029) at 1/30 dilution

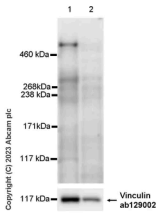
All lanes:

MEF (mouse embryo fibroblast) whole cell fresh lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



Western blot - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Heparan Sulfate Proteoglycan 2/Perlecan Western blot staining using rabbit Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody

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

Negative control: Neuro-2a.

In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.

All lanes:
Western blot - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029) at 1/1000 dilution

Lane 1:
MEF (mouse embryo fibroblast) whole cell fresh lysate at 50 µg

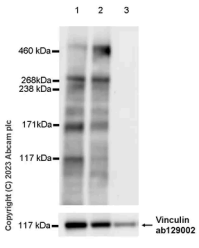
Lane 2:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell fresh lysate at 50 µg

Secondary

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

Observed band size: 469 kDa, 124 kDa

Exposure time: 92s



Western blot - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029)

Heparan Sulfate Proteoglycan 2/Perlecan Western blot staining using rabbit Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody

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

Negative control: RAW 264.7(PMID: 35887248).

In blot 2, the lysate was stored at -80☒ prior to Western Blotting. In blot 1, lysate was freshly made and used for Western Blotting immediately to minimize protein degradation.

In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.

All lanes:
Western blot - Anti-Heparan Sulfate Proteoglycan 2/Perlecan antibody [EPR28346-84] (ab315029) at 1/1000 dilution

Lane 1:
MEF (mouse embryo fibroblast) whole cell lysate at 50 µg

Lane 2:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 50 µg

Lane 3:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 50 µg

Secondary

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

Observed band size: 469 kDa, 124 kDa

Exposure time: 48s

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