

Datasheet: 2150-1470

BATCH NUMBER 163731

Description:	RABBIT ANTI MOUSE COLLAGEN IV
Specificity:	COLLAGEN IV
Format:	Purified
Product Type:	Polyclonal Antibody
Isotype:	Polyclonal IgG
Quantity:	0.1 ml

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Immunohistology - Frozen	▪			1/500
Immunohistology - Paraffin	▪			1/500
ELISA	▪			1/2000
Immunoprecipitation			▪	
Western Blotting			▪	
Immunofluorescence	▪			1/40

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

Target Species

Mouse

Species Cross Reactivity

Reacts with: Orangutan, Rat, Human

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified Ig - liquid

Preparation

Purified IgG prepared by antigen column chromatography

Buffer Solution

Phosphate buffered saline

Preservative <0.1% Sodium Azide (NaN₃)
Stabilisers Antibiotic antimycotic mixture 1%

Immunogen Collagen IV purified from mouse EHS tumor.

External Database Links

UniProt:

P02463	Related reagents
P08122	Related reagents
Q9QZS0	Related reagents
Q9QZR9	Related reagents
Q80V57	Related reagents
Q6PFB1	Related reagents

Entrez Gene:

12826	Col4a1	Related reagents
12827	Col4a2	Related reagents
12828	Col4a3	Related reagents
12829	Col4a4	Related reagents

RRID AB_2082660

Specificity

Rabbit anti Mouse Collagen IV antibody recognizes mouse collagen type IV. Collagen IV is a 1682 amino acid ~160 kDa (predicted) matrix protein and major component of glomerular basement membranes. Multiple isoforms exist each capable of forming triple helical structures with two other chains to form the type IV collagen network. The collagen IV alpha chain can be cleaved between residues 1444-1445 to yield the c-terminal 225 amino acid, ~28 kDa arrestin fragment, collagen α2(IV) yields a c-terminal canstatin fragment while Collagen α3(IV) yields a tumstatin fragment. Collagen IV bears a single [collagen IV NC1](#) (C-terminal non-collagenous) domain ([UniProt: Q9QZR9](#)).

Mutations in collagen IV genes have been implicated in inherited nephropathies and potentially in cystic kidney disease and intracranial aneurysms ([Plaisier et al. 2007](#)).

Rabbit anti Mouse Collagen IV antibody has been successfully employed for the detection of collagen IV by immunofluorescence and immunohistochemistry in mice ([Tang et al. 2010](#)), rats ([Shen et al. 2014](#)) and orangutan ([Bredies et al. 2013](#)).

The following cross reactivities have been observed:

Mouse type IV	100%
Mouse types I, II & III	<0.1%
Human types IV & V	<0.1%
Mouse fibronectin & laminin	<0.1%

References

1. Xu Q. *et al.* (2004) Vascular development in the retina and inner ear: control by Norrin and Frizzled-4, a high-affinity ligand-receptor pair. [Cell. 116: 883-95.](#)

2. Kojima, T. *et al.* (2007) Proangiogenic role of ephrinB1/EphB1 in basic fibroblast growth factor-induced corneal angiogenesis. [Am J Pathol. 170: 764-73.](#)
3. Fantin, A. *et al.* (2010) Tissue macrophages act as cellular chaperones for vascular anastomosis downstream of VEGF-mediated endothelial tip cell induction. [Blood. 116: 829-40.](#)
4. Chen, M. *et al.* (2010) Immune activation in retinal aging: a gene expression study. [Invest Ophthalmol Vis Sci. 51: 5888-96.](#)
5. Rubin, A.N. *et al.* (2010) The germinal zones of the basal ganglia but not the septum generate GABAergic interneurons for the cortex. [J Neurosci. 30: 12050-62.](#)
6. Scott, A. *et al.* (2010) Astrocyte-derived vascular endothelial growth factor stabilizes vessels in the developing retinal vasculature. [PLoS One. 5: e11863.](#)
7. Armulik, A. *et al.* (2010) Pericytes regulate the blood-brain barrier. [Nature. 468: 557-61.](#)
8. Tang, Z. *et al.* (2010) Survival effect of PDGF-CC rescues neurons from apoptosis in both brain and retina by regulating GSK3beta phosphorylation. [J Exp Med. 207: 867-80.](#)
9. Stenzel, D. *et al.* (2011) Integrin-dependent and -independent functions of astrocytic fibronectin in retinal angiogenesis. [Development. 138: 4451-63.](#)
10. Li, W. and Mukoyama, Y.S. (2011) Whole-mount immunohistochemical analysis for embryonic limb skin vasculature: a model system to study vascular branching morphogenesis in embryo. [J Vis Exp. 51: pii: 2620.](#)
11. Dulauroy, S. *et al.* (2012) Lineage tracing and genetic ablation of ADAM12(+) perivascular cells identify a major source of profibrotic cells during acute tissue injury. [Nat Med. 18: 1262-70.](#)
12. Powner, M.B. *et al.* (2012) Visualization of gene expression in whole mouse retina by in situ hybridization. [Nat Protoc. 7: 1086-96.](#)
13. Zuercher, J. *et al.* (2012) Norrin stimulates cell proliferation in the superficial retinal vascular plexus and is pivotal for the recruitment of mural cells. [Hum Mol Genet. 21: 2619-30.](#)
14. Arnold, T.D. *et al.* (2012) Defective retinal vascular endothelial cell development as a consequence of impaired integrin $\alpha V\beta 8$ -mediated activation of transforming growth factor- β . [J Neurosci. 32: 1197-206.](#)
15. Takagi, N. *et al.* (2012) Mineralocorticoid Receptor Blocker Protects against Podocyte-Dependent Glomerulosclerosis. [Nephron Extra. 2: 17-26.](#)
16. Ma, S. *et al.* (2012) Ric-8a, a Guanine Nucleotide Exchange Factor for Heterotrimeric G Proteins, Regulates Bergmann Glia-Basement Membrane Adhesion during Cerebellar Foliation. [J Neurosci. 32: 14979-93.](#)
17. McKenzie, J.A. *et al.* (2012) Apelin is required for non-neovascular remodeling in the retina. [Am J Pathol. 180: 399-409.](#)
18. Schulz, C. *et al.* (2012) A lineage of myeloid cells independent of Myb and hematopoietic stem cells. [Science. 336: 86-90.](#)
19. Edgar, K. *et al.* (2012) eNOS Overexpression Exacerbates Vascular Closure in the Obliterative Phase of OIR and Increases Angiogenic Drive in the Subsequent Proliferative Stage. [Invest Ophthalmol Vis Sci. 53: 6833-50.](#)
20. Lange, C.A. *et al.* (2012) Von Hippel-Lindau protein in the RPE is essential for normal ocular growth and vascular development. [Development. 139: 2340-50.](#)
21. Lutter, S. *et al.* (2012) Smooth muscle-endothelial cell communication activates Reelin signaling and regulates lymphatic vessel formation. [J Cell Biol. 197: 837-49.](#)
22. Bredies, K. *et al.* (2013) Computer-assisted counting of retinal cells by automatic

- segmentation after TV denoising. [BMC Ophthalmol. 13: 59.](#)
23. Chen, M. *et al.* (2013) Age- and light-dependent development of localised retinal atrophy in CCL2(-/-)CX3CR1(GFP/GFP) mice. [PLoS One. 8: e61381.](#)
24. Chu, C.J. *et al.* (2013) Assessment and *in vivo* scoring of murine experimental autoimmune uveoretinitis using optical coherence tomography. [PLoS One. 8 \(5\): e63002.](#)
25. Weinl, C. *et al.* (2014) Elk3 deficiency causes transient impairment in post-natal retinal vascular development and formation of tortuous arteries in adult murine retinae. [PLoS One. 9: e107048.](#)
26. Scott, A. *et al.* (2014) Quantification of vascular tortuosity as an early outcome measure in oxygen induced retinopathy (OIR) [Exp Eye Res. 120: 55-60.](#)
27. Shen, W. *et al.* (2014) Systemic Administration of Erythropoietin Inhibits Retinopathy in RCS Rats. [PLoS One. 9: e104759.](#)
28. Yukiura H *et al.* (2015) Autotaxin overexpression causes embryonic lethality and vascular defects. [PLoS One. 10 \(5\): e0126734.](#)
29. Wu, W.K. *et al.* (2015) IL-4 regulates specific Arg-1(+) macrophage sFlt-1-mediated inhibition of angiogenesis. [Am J Pathol. 185 \(8\): 2324-35.](#)
30. Williams, J.A. *et al.* (2016) Regulation of C3 Activation by the Alternative Complement Pathway in the Mouse Retina. [PLoS One. 11 \(8\): e0161898.](#)
31. Piñero, G. *et al.* (2017) Lithium Reversibly Inhibits Schwann Cell Proliferation and Differentiation Without Inducing Myelin Loss. [Mol Neurobiol. 54 \(10\): 8287-307.](#)
32. Gurnik, S. *et al.* (2016) Angiopoietin-2-induced blood-brain barrier compromise and increased stroke size are rescued by VE-PTP-dependent restoration of Tie2 signaling. [Acta Neuropathol. 131 \(5\): 753-73.](#)
33. Misra, A. *et al.* (2016) Integrin $\beta 3$ inhibition is a therapeutic strategy for supravulvular aortic stenosis. [J Exp Med. 213 \(3\): 451-63.](#)
34. Yanagida, K. *et al.* (2017) Size-selective opening of the blood-brain barrier by targeting endothelial sphingosine 1-phosphate receptor 1. [Proc Natl Acad Sci U S A. 114 \(17\): 4531-6.](#)
35. Toffoli, B. *et al.* (2017) Nephropathy in Pparg-null mice highlights PPAR γ systemic activities in metabolism and in the immune system. [PLoS One. 12 \(2\): e0171474.](#)
36. Fernández-robredo, P. *et al.* (2017) Neuropilin 1 Involvement in Choroidal and Retinal Neovascularisation. [PLoS One. 12 \(1\): e0169865.](#)
37. Kim, B. *et al.* (2018) Endothelial pyruvate kinase M2 maintains vascular integrity. [J Clin Invest. 128 \(10\): 4543-56.](#)
38. Stone, O.A. *et al.* (2018) Loss of pyruvate kinase M2 limits growth and triggers innate immune signaling in endothelial cells. [Nat Commun. 9 \(1\): 4077.](#)
39. Niaudet, C. *et al.* (2019) Adgrf5 contributes to patterning of the endothelial deep layer in retina. [Angiogenesis. 22 \(4\): 491-505.](#)
40. Villard, O. *et al.* (2020) Characterization of immortalized human islet stromal cells reveals a MSC-like profile with pancreatic features. [Stem Cell Res Ther. 11 \(1\): 158.](#)
41. Krivanek, J. *et al.* (2020) Dental cell type atlas reveals stem and differentiated cell types in mouse and human teeth. [Nat Commun. 11 \(1\): 4816.](#)
42. Roth, M. *et al.* (2020) Parenchymal pericytes are not the major contributor of extracellular matrix in the fibrotic scar after stroke in male mice. [J Neurosci Res. 98 \(5\): 826-842.](#)
43. Elabi, O. *et al.* (2021) Human α -synuclein overexpression in a mouse model of Parkinson's disease leads to vascular pathology, blood brain barrier leakage and pericyte

activation. [Sci Rep. 11 \(1\): 1120.](#)

44. Månberg, A. *et al.* (2021) Altered perivascular fibroblast activity precedes ALS disease onset. [Nat Med. 27 \(4\): 640-6.](#)

45. Mohanta, S.K. *et al.* (2022) Neuroimmune cardiovascular interfaces control atherosclerosis. [Nature. 605 \(7908\): 152-9.](#)

46. Watanabe, C. *et al.* (2022) Essential Roles of Exocyst Complex Component 3-like 2 on Cardiovascular Development in Mice. [Life \(Basel\). 12 \(11\): 1730.](#)

Storage This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.

Guarantee 12 months from date of despatch

Health And Safety Information Material Safety Datasheet documentation #20470 available at: <https://www.bio-rad-antibodies.com/SDS/2150-1470>
20470

Regulatory For research purposes only

Related Products

Recommended Secondary Antibodies

Sheep Anti Rabbit IgG (STAR34...) [FITC](#)

Goat Anti Rabbit IgG (H/L) (STAR124...) [HRP](#)

Sheep Anti Rabbit IgG (STAR35...) [RPE](#)

Goat Anti Rabbit IgG (Fc) (STAR121...) [Biotin](#), [FITC](#), [HRP](#)

Recommended Useful Reagents

[ANTIGEN RETRIEVAL BUFFER, pH8.0 \(BUF025A\)](#)

North & South Tel: +1 800 265 7376

America Fax: +1 919 878 3751

Email: antibody_sales_us@bio-rad.com

Worldwide

Tel: +44 (0)1865 852 700

Fax: +44 (0)1865 852 739

Email: antibody_sales_uk@bio-rad.com

Europe

Tel: +49 (0) 89 8090 95 21

Fax: +49 (0) 89 8090 95 50

Email: antibody_sales_de@bio-rad.com

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://www.bio-rad-antibodies.com/datasheets)

'M388981:210806'

Printed on 12 Aug 2023

© 2023 Bio-Rad Laboratories Inc | [Legal](#) | [Imprint](#)