

Purified anti-Vimentin Antibody

Catalog# / Size	677801 / 25 µg 677802 / 100 µg
Clone	O91D3
Regulatory Status	RUO
Other Names	CTRCT30, HEL 113, Epididymis Luminal Protein 113
Isotype	Mouse IgG2a, κ
Description	Vimentin are class-III intermediate filaments found in various non-epithelial cells, especially mesenchymal cells. Vimentin is a widely expressed and highly conserved 54 kD protein that is constitutively expressed in mesenchymal cells, endothelial cells lining blood vessels, renal tubular cells, macrophages, neutrophils, fibroblasts, and leukocytes ^{1,2} . Vimentin is used as a marker of mesenchymal cells to distinguish them from epithelial cells ³ . Increased vimentin expression is frequently used as an EMT marker in cancer ⁴ . Autoantibodies to vimentin are commonly found in patients with autoimmune diseases such as Lupus ⁵ and rheumatoid arthritis ⁶ , and also found after transplantation ⁷ .

Product Details

Verified Reactivity	Human
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Full length human vimentin produced in <i>E. coli</i> .
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	WB - Quality tested ICC, ICFC, IHC-P, IHC-F - Verified
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting . For Western blotting, the suggested use of this reagent is 0.25 - 2.5 µg per mL. For immunocytochemistry, a concentration range of 1.0 - 5.0 µg/mL is recommended. For flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per million cells in 100 µL volume. For immunohistochemistry on formalin-fixed paraffin-embedded tissue sections, a concentration range of 1.0 - 5.0 µg/mL is suggested. For immunohistochemistry on frozen tissue sections, a concentration range of 1.0 - 10.0 µg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	While this clone recognizes mouse Vimentin, we do not recommend its usage for western blot due to poor affinity of the antibody for the protein. Additional reported applications for the relevant formats include: spatial biology (IBEX) ^{1,2} .
Application References	1. Radtke AJ, <i>et al.</i> 2020. <i>Proc Natl Acad Sci USA</i> . 117:33455-33465. (SB) PubMed 2. Radtke AJ, <i>et al.</i> 2022. <i>Nat Protoc</i> . 17:378-401. (SB) PubMed
(PubMed link indicates BioLegend citation)	
Product Citations	1. Rodríguez E, <i>et al.</i> 2022. <i>Commun Biol</i> . 5:41. PubMed
RRID	AB_2565911 (BioLegend Cat. No. 677801) AB_2565982 (BioLegend Cat. No. 677802)

Antigen Details

Structure	466 amino acids with a predicted molecular weight of approximately 54 kD.
Distribution	Cytoplasm.
Function	Vimentins are class-III intermediate filaments found in various non-epithelial cells, especially mesenchymal cells. Vimentin is attached to the nucleus, endoplasmic reticulum, and mitochondria, either laterally or terminally.
Interaction	HCV core protein, LGSN, SYNM, PLEC, SLC6A4, STK33, LARP6, RAB8B, TOR1A, TOR1AIP1, and BCAS3.
Cell Type	B cells, Mesenchymal Stem Cells, Neural Stem Cells, Neutrophils
Biology Area	Cell Adhesion, Cell Biology, Cell Motility/Cytoskeleton/Structure, Immunology, Neuroscience, Neuroscience Cell Markers, Stem Cells
Molecular Family	Intermediate Filaments
Antigen References	<ol style="list-style-type: none">1. Kidd ME, <i>et al.</i> 2014. <i>Am. J. Respir. Cell Mol. Biol.</i> 50:1.2. Fuchs E, <i>et al.</i> 1994. <i>Annu. Rev. Biochem.</i> 63:345.3. Zeisberg M, <i>et al.</i> 2009. <i>J. Clin. Invest.</i> 119:1429.4. Scanlon CS, <i>et al.</i> 2013. <i>J. Dent. Res.</i> 92:114.5. Thebault S, <i>et al.</i> 2002. <i>J. Immunol.</i> 169:4046.6. Vossenaar ER, <i>et al.</i> 2004. <i>Arthritis Res. Ther.</i> 6:R142.7. Rose ML. 2013. <i>Hum. Immunol.</i> 74:1459.
Gene ID	7431

Related Protocols

[Immunohistochemistry Protocol for Frozen Sections](#)

[Immunocytochemistry Staining Protocol](#)

[Western Blotting Protocol](#)

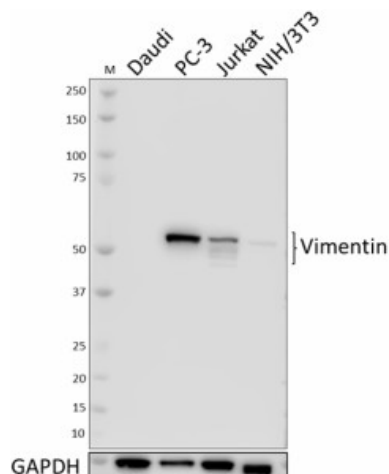
[Intracellular Flow Cytometry Staining Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

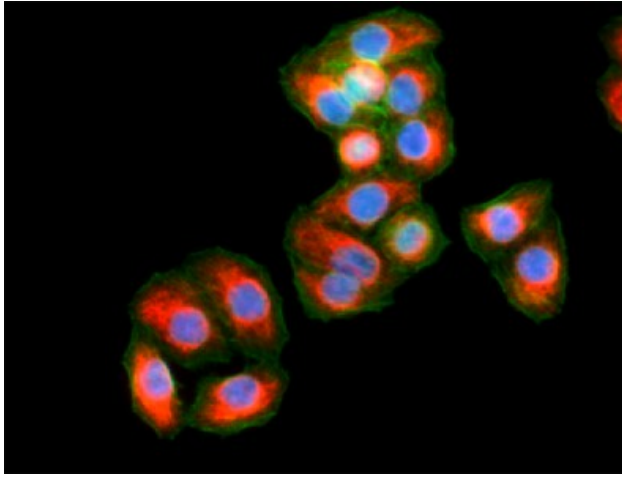
Other Formats

Alexa Fluor® 594 anti-Vimentin, Purified anti-Vimentin, Direct-Blot™ HRP anti-Vimentin, Alexa Fluor® 647 anti-Vimentin, Alexa Fluor® 488 anti-Vimentin

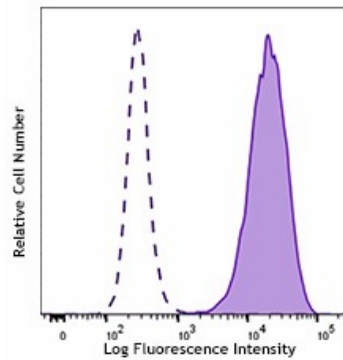
Product Data



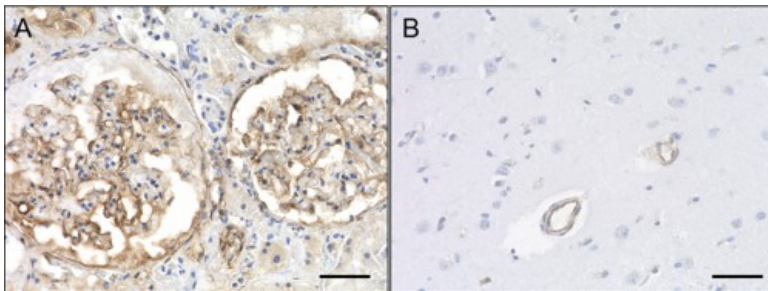
Total cell lysates (15 µg total protein) from Daudi (negative control), PC-3, Jurkat and NIH/3T3 cells were resolved by 4-12% Bis-Tris gel electrophoresis, transferred to a nitrocellulose membrane, and probed with 0.25 µg/mL (1:2000 dilution) of Purified anti-Vimentin Antibody, clone O91D3, overnight at 4°C. Proteins were visualized by chemiluminescence detection using HRP goat anti-mouse IgG Antibody (Cat. No. 405306) at a 1:3000 dilution. Direct-Blot™ HRP anti-GAPDH Antibody (Cat. No. 607904) was used as a loading control at a 1:50000 dilution (lower). Lane M: Molecular Weight marker. Predicted expression data was obtained from Human Protein Atlas.



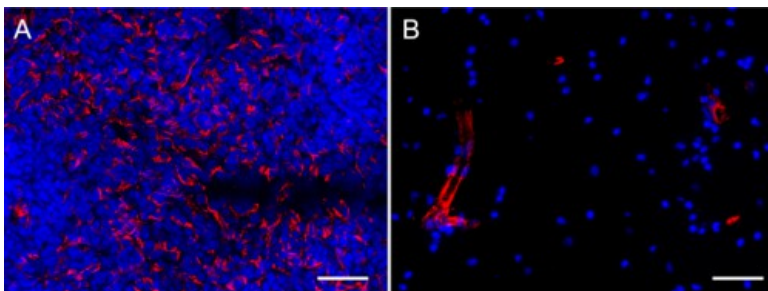
HeLa cells were stained with purified anti-Vimentin (clone O91D3) antibody, followed by staining with Alexa Fluor® 594 conjugated goat anti-mouse IgG antibody (red). Actin filaments were labeled with Alexa Fluor® 647 Phalloidin (green). Nuclei were counterstained with DAPI (blue). The image was captured with a 40X objective.



Jurkat cells (filled histogram, positive control) and Daudi cells (open histogram, negative control) were fixed with Fixation Buffer (Cat. No. 420801), permeabilized using True-Phos™ Perm Buffer (Cat. No. 425401), and intracellularly stained with 0.25 µg/test of purified anti-Vimentin antibody (clone O91D3) followed by PE goat anti-mouse IgG antibody (Cat. No. 405307).



IHC staining of anti-Vimentin antibody (clone O91D3) on formalin-fixed paraffin-embedded human kidney (A) and brain (B) tissues. Following antigen retrieval using Sodium Citrate H.I.E.R. (Cat. No. 928502), the tissues were incubated with 5 µg/mL of the anti-Vimentin antibody overnight at 4°C. BioLegend's Ultra Streptavidin HRP Kit (Multi-Species, DAB, Cat. No. 929501) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The images were captured with a 40X objective. Scale bar: 50 µm.



IHC staining of anti-Vimentin antibody (clone O91D3) on frozen human spleen (A) and brain (B) tissues. Following fixation with Fixation Buffer (Cat. No. 420801) and permeabilization with 0.5% Triton X-100, the tissue sections were incubated with 5.0 µg/mL of anti-Vimentin antibody overnight at 4°C followed by incubation with Alexa Fluor® 594 Goat anti-mouse IgG antibody (Cat. No. 405326) for 2-hours at room temperature. Nuclei were counterstained with DAPI (Cat. No. 422801) and the slides were mounted with ProLong™ Gold Antifade Mountant. These images were captured with a 40X objective. Scale bar: 50µm.

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