Alexa Fluor® 594 anti-mouse/human CD324 (E-Cadherin) Antibody

Catalog# / Size	147306 / 100 µg
Clone	DECMA-1
Regulatory Status	RUO
Other Names	E-Cadherin, Cadherin-1, CDH1, and UVO
Isotype	Rat IgG1, κ
Description	CD324, also known as E-cadherin, cadherin-1, CDH1, and UVO is a member of the cadherin superfamily. It is a calcium-dependent, transmembrane cell-cell adhesion glycoprotein composed of four extracellular cadherin repeats and a highly conserved cytoplasmic tail region. CD324 is widely expressed in epithelial cells in the colon, uterus, liver, keratinocytes, brain, heart, muscle, kidney, and pancreas as well as erythroid cells. CD324 functions as a cell adhesion molecule involved in development, bacterial pathogenesis, and tumor invasion. In bacterial pathogenesis, the ectodomain of CD324 mediates bacterial adhesion to mammalian cells, while the cytoplasmic domain is required for internalization. CD324 binds to the αEβ7 integrin to mediate cell adhesion and also interacts with a number of intracellular proteins including including erbin, ezrin, caspase-3, caspase-8, β-catenin, presenilin 1, and casein kinase II as well as other extracellular proteins including the EGF receptor.

Product Details

Verified Reactivity	Mouse, Human
Reported Reactivity	Cynomolgus, Dog, Pig
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	E-Cadherin extracellular domain
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 594 under optimal conditions.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. **Do not freeze.**
Application	ICC - *Quality tested* IHC-P, IHC-F, 3D IHC - *Verified*
Recommended Usage	Each lot of this antibody is quality control tested by immunocytochemistry. For immunocytochemistry, a concentration range of 5.0 - 20 µg/mL is recommended. For immunohistochemical staining of formalin-fixed paraffin-embedded tissue sections, a concentration range of 5.0 - 10 µg/mL is suggested. For immunohistochemical staining of frozen tissue sections, a concentration range of 2.0 - 5.0 µg/mL is suggested. For 3D immunohistochemistry on formalin-fixed tissues, a concentration of 5.0 µg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application. * Alexa Fluor® 594 has an excitation maximum of 590 nm, and a maximum emission of 617 nm. Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation. View full statement regarding label licenses
Application Notes	Additional reported applications (for relevant formats) include: immunoprecipitation[1], Western Blotting[1], immunomicroscopy[3], biological function[1,2], and spatial biology (IBEX)[4,5].
Application References	1. Vestweber D, *et al.* 1985. *EMBO.* 4:3393. (IP, WB, FA)

(PubMed link indicates BioLegend citation)	2. Nakagawa M, *et al.* 2001. *J. Cell Sci.* 114:1829. (FA in canine cells) 3. Mohamet L, *et al.* 2010. *PLoS ONE.* 5:e12921. (IF) 4. Radtke AJ, *et al.* 2020. *Proc Natl Acad Sci U S A.* 117:33455-65. (SB) PubMed 5. Radtke AJ, *et al.* 2022. *Nat Protoc.* 17:378-401. (SB) PubMed
Product Citations	1. Zhang X, *et al.* 2019. iScience. 19:607. PubMed 2. Moon H, *et al.* 2019. Nat Commun. 10:2225. PubMed
RRID	AB_2563230 (BioLegend Cat. No. 147306)

Antigen Details

Structure	Member of the cadherin superfamily. Calcium-dependent, transmembrane cell-cell adhesion glycoprotein composed of four extracellular cadherin repeats and a highly conserved cytoplasmic tail region.
Distribution	Widely expressed in epithelial cells in the colon, uterus, liver, keratinocytes, brain, heart, muscle, kidney, and pancreas as well as erythroid cells.
Function	Cell adhesion molecule involved in development, bacterial pathogenesis, and tumor invasion. The ectodomain of CD324 mediates bacterial adhesion to mammalian cells, while the cytoplasmic domain is required for internalization.
Interaction	Interacts with a variety of proteins including erbin, ezrin, caspase-3, caspase-8, EGF receptor, β-catenin, presenilin 1, casein kinase II, and others.
Ligand/Receptor	αEβ7 integrin.
Cell Type	Embryonic Stem Cells
Biology Area	Cell Adhesion, Cell Biology, Immunology, Innate Immunity, Neuroscience, Stem Cells, Synaptic Biology
Molecular Family	Adhesion Molecules, CD Molecules
Antigen References	1. Overduin M, *et al.* 1995. *Science* 267:386. 2. Boggon TJ, *et al.* 2002. *Science* 296:1308. 3. Berx G, *et al.* 1995. *EMBO J.* 14:6107. 4. Perl AK, *et al.* 1998. *Nature* 392:190.
Gene ID	999 12550

Related Protocols

Immunohistochemistry Protocol for Frozen Sections

Immunocytochemistry Staining Protocol

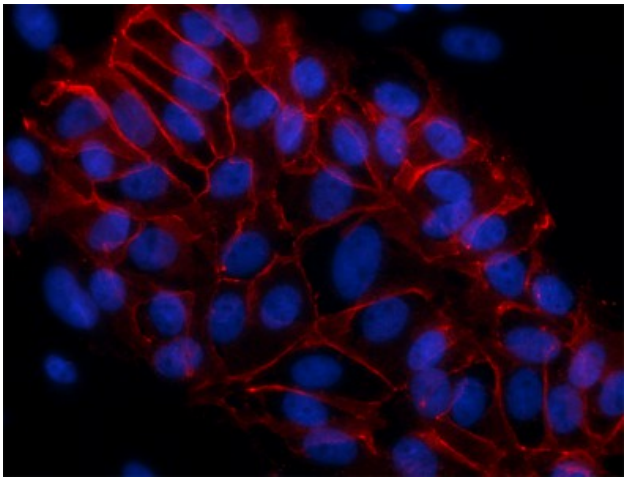
Immunohistochemistry Protocol for Paraffin-Embedded Sections

Ce3D™ Tissue Clearing Kit

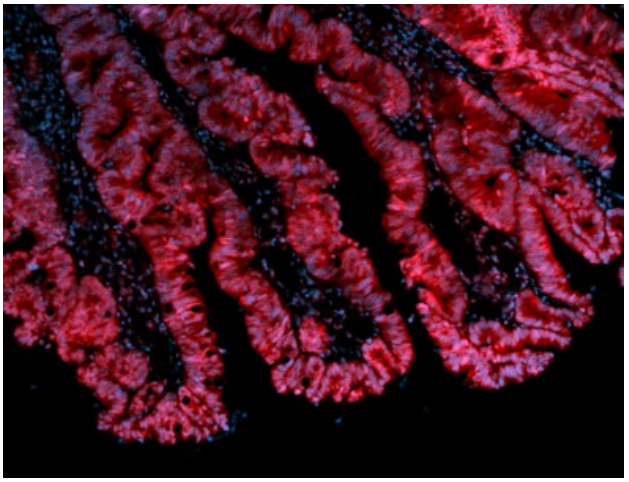
Other Formats

Purified anti-mouse/human CD324 (E-Cadherin), PE anti-mouse/human CD324 (E-Cadherin), Alexa Fluor® 594 anti-mouse/human CD324 (E-Cadherin), Alexa Fluor® 647 anti-mouse/human CD324 (E-Cadherin), PE/Cyanine7 anti-mouse/human CD324 (E-Cadherin), PE/Dazzle™ 594 anti-mouse/human CD324 (E-Cadherin), PerCP/Cyanine5.5 anti-mouse/human CD324 (E-Cadherin), APC anti-mouse/human CD324 (E-Cadherin), Brilliant Violet 421™ anti-mouse/human CD324 (E-Cadherin), APC/Fire™ 750 anti-mouse/human CD324 (E-Cadherin)

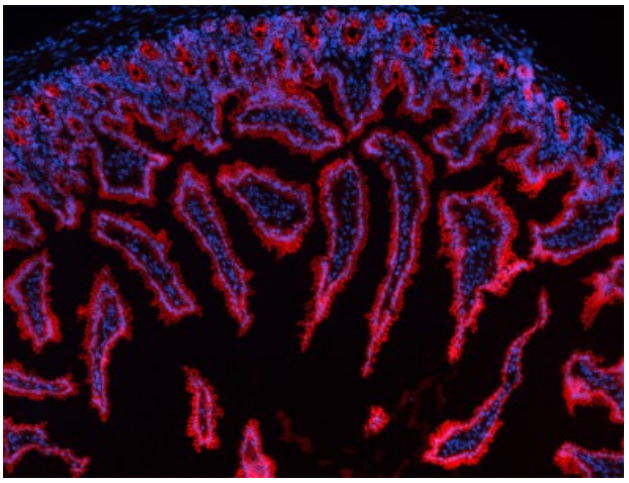
Product Data



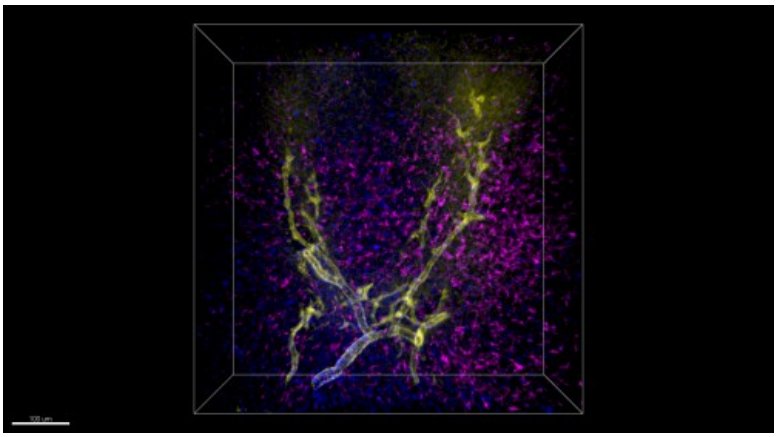
Madin-darby canine kidney epithelial cell line, MDCK, was cultured in a chamber slide until confluent. The cells were fixed with 1% paraformaldehyde (PFA) for 10 minutes, permeabilized with 0.5% Triton X-100 for 10 minutes, and blocked with 5% FBS for 30 minutes. The cells were then intracellularly stained with 10 µg/mL of CD324 (clone DECMA-1) Alexa Fluor® 594 (red) in blocking buffer overnight at 4°C. Nuclei were counterstained with DAPI (blue). The image was captured with 40X objective.



Human paraffin-embedded colon cancer tissue slices were prepared with a standard protocol of deparaffinization and rehydration. Antigen retrieval was done with Tris-Buffered Saline 1X (1.0M, pH 7.4) at 95°C for 40 minutes. Tissue was washed with PBS/0.05% Tween 20 twice for five minutes and blocked with 5% FBS and 0.2% gelatin for 30 minutes. Then, the tissue was stained with 10 µg/mL of anti-human CD324 (clone DECMA-1) Alexa Fluor® 594 (red) at 4°C overnight. Nuclei were counterstained with DAPI (blue). The image was captured with a 10X objective.



C57BL/6 mouse frozen intestine section was fixed with 4% paraformaldehyde (PFA) for 10 minutes at room temperature and blocked with 5% FBS plus 5% rat serum for 1 hour at room temperature. Then the section was stained with 5 µg/mL of CD324 (clone DECMA-1) Alexa Fluor® 594 (red) in blocking buffer overnight at 4°C. Nuclei were counterstained with DAPI (blue). The image was captured by 10X objective.



Paraformaldehyde-fixed (1%), 500 µm-thick mouse liver tissue section was processed according to the Ce3DTM Tissue Clearing Kit protocol (cat. no. 427701). The section was costained with anti-mouse/human CD324 (E-Cadherin) antibody (clone DECMA-1) Alexa Fluor® 594 at 5 µg/mL (yellow), and anti-mouse CLEC4F antibody (clone 3E3F9) Alexa Fluor® 647 at 5 µg/mL (magenta) and counterstained with DAPI (blue). The section was then optically cleared and mounted in a sample chamber. The image was captured with a 20X objective using Zeiss 780 confocal microscope and processed by Imaris image analysis software.
Watch the video.

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