

PE anti-human CD49d Antibody

Catalog# / Size	304303 / 25 tests 304304 / 100 tests
Clone	9F10
Regulatory Status	RUO
Workshop	V S215
Other Names	VLA-4 α chain, α 4 integrin, Integrin α 4 chain, ITGA4
Isotype	Mouse IgG1, κ
Description	CD49d is a 150 kD α integrin chain known as α 4 integrin or VLA-4 α chain. It forms a heterodimer with either integrin β 1 (α 4 β 1, VLA-4) or β 7 (α 4 β 7). CD49d is expressed broadly on T lymphocytes, B lymphocytes, monocytes, thymocytes, eosinophils, basophils, mast cells, NK cells, dendritic cells, and some non-hematopoietic cells, but not on normal red blood cells, platelets or neutrophils. VLA-4 binds to VCAM-1 (CD106) and fibronectin. α 4 β 7 is the receptor for VCAM-1 and MAdCAM-1. CD49d participates in mononuclear cell trafficking to endothelial sites of inflammation and has roles in cell-cell interactions and cell adhesion to extracellular matrices. CD49d is involved in lymphocyte migration, T cell activation, and hematopoietic stem cell differentiation. CD49d is a marker to isolate pure populations of Treg cells due to its absence on Foxp3 ⁺ cells.

Product Details

Verified Reactivity	Human, Cynomolgus, Rhesus
Reported Reactivity	African Green, Baboon, Cat, Cow, Chimpanzee, Common Marmoset, Dog, Horse, Sheep, Squirrel Monkey
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA)
Preparation	The antibody was purified by affinity chromatography, and conjugated with PE under optimal conditions.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
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	FC - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis . For flow cytometric staining, the suggested use of this reagent is 5 μ l per million cells in 100 μ l staining volume or 5 μ l per 100 μ l of whole blood.
Excitation Laser	Blue Laser (488 nm) Green Laser (532 nm)/Yellow-Green Laser (561 nm)
Application Notes	Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue sections, and <i>in vitro</i> T cell costimulation ^{2,3} . The Ultra-LEAF™ Purified antibody (Endotoxin < 0.01 EU/ μ g, Azide-Free, 0.2 μ m filtered) is recommended for functional assays (Cat. No. 304339 and 304340).
Application References	1. Schlossman S, <i>et al.</i> Eds. 1995. Leucocyte Typing V. Oxford University Press. New York. 2. Jeong SH, <i>et al.</i> 2004. <i>J. Virol.</i> 78:6995. (Costim) 3. Vogel TU, <i>et al.</i> 2002. <i>J. Immunol.</i> 169:4511. (Costim) 4. Kleinewietfeld M, <i>et al.</i> 2009. <i>Blood</i> 113:827. (FC) PubMed 5. Palacios F, <i>et al.</i> 2010. <i>Blood</i> 115:4488. PubMed
(PubMed link indicates BioLegend citation)	

6. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
7. Sestak K, *et al.* 2007. *Vet. Immunol. Immunopathol.* 119:21.
8. Mattapallil MJ, *et al.* 2011. *J. Immunol.* 187:1977. [PubMed](#)

Product Citations

1. Zhang Z, Shively J 2013. *PLoS One.* 8:67649. [PubMed](#)
2. Ito K, *et al.* 2008. *Matrix Biol.* 28:11. [PubMed](#)
3. Liu S, *et al.* 2021. *Mol Ther.* 29:1918. [PubMed](#)
4. Lan X, *et al.* 2020. *Molecular Cell.* 81(2):239-254. e8. [PubMed](#)
5. Velázquez-Avila M, *et al.* 2019. *Leukemia.* 33:1337. [PubMed](#)
6. McGill JL, *et al.* 2018. *Front Immunol.* 1.475694444. [PubMed](#)
7. Eikmans M, *et al.* 2022. *Front Immunol.* 13:814019. [PubMed](#)
8. Newby GA, *et al.* 2021. *Nature.* 595:295. [PubMed](#)
9. Ruan Y, *et al.* 2022. *Exp Ther Med.* 23:47. [PubMed](#)
10. Kawamoto E, *et al.* 2021. *Biomedicines.* 9: [PubMed](#)

RRID

AB_314429 (BioLegend Cat. No. 304303)
AB_314430 (BioLegend Cat. No. 304304)

Antigen Details

Structure	Integrin, type I transmembrane glycoprotein, 150 kD.
Distribution	T cells, B cells, NK , dendritic cells, thymocytes, monocytes, eosinophils, mast cells.
Function	Lymphocyte migration, T cell activation, stem cell differentiation.
Ligand/Receptor	Fibronectin, VCAM-1, MAdCAM-1
Cell Type	B cells, Dendritic cells, Eosinophils, Mast cells, Monocytes, NK cells, T cells, Thymocytes, Tregs
Biology Area	Cell Adhesion, Cell Biology, Immunology, Innate Immunity
Molecular Family	Adhesion Molecules, CD Molecules
Antigen References	1. Elices M, Ed.1995. <i>Springer Semin. Immunopathol.</i> 16(4). 2. Lobb RR and Helmer ME. <i>et al.</i> 1994. <i>J. Clin. Invest.</i> 94:1722.
Gene ID	3676

Related Protocols

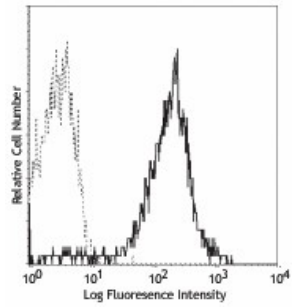
[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-human CD49d, PE anti-human CD49d, PE/Cyanine5 anti-human CD49d, Purified anti-human CD49d, Alexa Fluor® 594 anti-human CD49d, PerCP/Cyanine5.5 anti-human CD49d, PE/Cyanine7 anti-human CD49d, FITC anti-human CD49d, Brilliant Violet 510™ anti-human CD49d, Brilliant Violet 421™ anti-human CD49d, Purified anti-human CD49d (Maxpar® Ready), Brilliant Violet 605™ anti-human CD49d, PE/Dazzle™ 594 anti-human CD49d, APC/Cyanine7 anti-human CD49d, Brilliant Violet 711™ anti-human CD49d, Alexa Fluor® 647 anti-human CD49d, Biotin anti-human CD49d, TotalSeq™-A0576 anti-human CD49d, Brilliant Violet 785™ anti-human CD49d, APC/Fire™ 750 anti-human CD49d, Ultra-LEAF™ Purified anti-human CD49d, TotalSeq™-C0576 anti-human CD49d, TotalSeq™-B0576 anti-human CD49d Antibody, TotalSeq™-D0576 anti-human CD49d

Product Data

Human peripheral blood lymphocytes
stained with 9F10 PE



For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587