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Product Data Sheet

Alexa Fluor® 647 anti-human CD49d

Catalog # / Size: 2121680 / 100 tests
2121675 / 25 tests

Clone: 9F10

Isotype: Mouse IgG1, κ

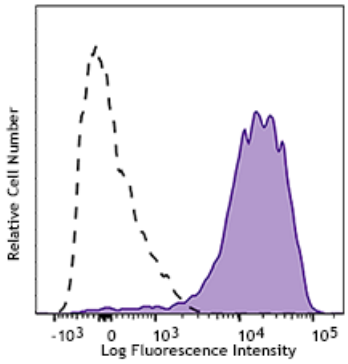
Reactivity: Human, Non-human primate, Other

Preparation: The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.

Formulation: Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).

Workshop Number: V S215

Concentration: Lot-specific



Human peripheral blood lymphocytes were stained with CD49d (clone 9F10) Alexa Fluor® 647 (filled histogram) or mouse IgG1, κ Alexa Fluor® 647 isotype control (open histogram).

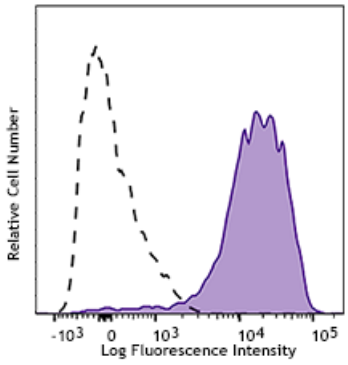
Applications:

Applications: Flow Cytometry

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 µl per million cells or 5 µl per 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.

* Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633 nm / 635 nm.

Application Notes: Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue sections, and *in vitro* T cell costimulation[2,3].



Human peripheral blood lymphocytes were stained with CD49d (clone 9F10) Alexa Fluor®647 (filled histogram) or mouse IgG1

Application References:

1. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press. New York.
2. Jeong SH, *et al.* 2004. *J. Virol.* 78:6995. (Costim)
3. Vogel TU, *et al.* 2002. *J. Immunol.* 169:4511. (Costim)
4. Kleinewietfeld M, *et al.* 2009. *Blood* 113:827. (FC) PubMed
5. Palacious F, *et al.* 2010. *Blood* 115:4488. PubMed
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

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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 β1 ($\alpha_4\beta_1$, VLA-4) or β7 ($\alpha_4\beta_7$). 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. $\alpha_4\beta_7$ 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.

Antigen References:

1. Elices M, Ed.1995. *Springer Semin. Immunopathol.* 16(4).
2. Lobb RR and Helmer ME. *et al.* 1994. *J. Clin. Invest.* 94:1722.

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