Technical Data Sheet

Purified Rat Anti-Mouse CD49d

Product Information

Material Number: 553154
Alternate Name: Integrin α4; Itga4; Integrin alpha-4; LPAM alpha; VLA-4 alpha; VLA-4
Size: 0.5 mg
Concentration: 0.5 mg/ml
Clone: R1-2
Immunogen: AKR/Cum mouse spontaneous T lymphoma line TK1
Isotype: Rat (F344) IgG2b, κ
Reactivity: QC Testing: Mouse
Storage Buffer: Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The R1-2 monoclonal antibody specifically binds to α4 chain (CD49d), which is expressed as a heterdimer with either of two β, β1 or β7 (also known as βp). The α4β1 integrin (VLA-4, CD49d/CD29) is expressed on most peripheral lymphocytes, thymocytes, and monocytes; while the α4β7 integrin (LPAM-1) is expressed on peripheral lymphocytes, but on only a small subset of thymocytes. These integrins mediate a variety of cell-cell and cell-matrix interactions, recognizing the ligands VCAM-1 (CD106) and fibronectin. There is evidence that levels of VLA-4 expression regulate the transendothelial migration of T lymphocytes into inflamed tissues. Integrin α4β7 also preferentially binds to the mucosal vascular addressin, MAAdCAM-1. The R1-2 antibody blocks some α4 integrin-mediated binding functions. In combination with mAb 9C10 (MFR4.B) (Cat. No. 553313), binding of VLA-4 expressing cells to VCAM-1 can be almost completely inhibited.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at 4°C.

Application Notes

Application

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<tr>
<td>Flow cytometry</td>
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<td>Immunoprecipitation</td>
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<td>Immunohistochemistry</td>
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Recommended Assay Procedure:

We recommend the alternate anti-mouse CD49d mAb 9C10 (MFR4.B) (Cat. No. 553314) for immunohistochemical staining of acetone-fixed frozen sections.

Suggested Companion Products

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<tr>
<td>553986</td>
<td>Purified Rat IgG2b, κ Isotype Control</td>
<td>0.5 mg</td>
<td>A95-1</td>
</tr>
<tr>
<td>554016</td>
<td>FITC Goat Anti-Rat Ig</td>
<td>0.5 mg</td>
<td>Polyclonal</td>
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Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.

References


Holzmann B, Weissman IL. Peyer's patch-specific lymphocyte homing receptors consist of a VLA-4-like alpha chain associated with either of two integrin beta chains, one of which is novel. EMBO J. 1989; 8(6):1735-1741. (Clone-specific: Immunoprecipitation)


Romanic AM, Graesser D, Baron JI, Visintin I, Janeway CA Jr, Madri JA. T cell adhesion to endothelial cells and extracellular matrix is modulated upon transendothelial cell migration. Lab Invest. 1997; 76(1):11-23. (Biology)