

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Integrin α 2/CD49b.
Source	Monoclonal Rat IgG _{2A} Clone # 430903
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Integrin α 2/CD49b Tyr30-Thr1132 Accession # P17301
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	MG63 human osteosarcoma cell line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Integrin α 2 is one of twelve integrin family α subunits that share the β 1 subunit (1-3). Integrin α 2 β 1 is the non-covalent heterodimer of 160 kDa α 2 (CD49b) and 130 kDa β 1 (CD29) type I transmembrane glycoprotein subunits and is one of six very late antigens on activated T cells, designated VLA2 (3). The α 2 extracellular domain (ECD) contains an I (inserted) domain which includes the ligand binding site (2, 3). The β 1 ECD contains a vWFA domain, which participates in binding. Each subunit then has a transmembrane sequence and a short cytoplasmic tail. The dimer is folded when it is least active. Divalent cations and intracellular (inside-out) signaling convert it to its most active, extended and open conformation (1, 2). The 1102 amino acid (aa) human α 2 extracellular domain (ECD) shares 83-89% aa sequence identity with mouse, rat, canine, bovine and equine α 2. The I domain-containing β 1 integrins (α 1 β 1, α 2 β 1, α 10 β 1 and α 11 β 1) all bind collagens, with α 2 β 1 preferring collagens I-III (4, 5). Platelet α 2 β 1, also called GPIa, cooperates with another adhesion protein, GPVI, to coordinate platelet collagen binding and activation (3, 6, 7). Other α 2 β 1 ligands include laminin, decorin, E-cadherin, and collagen-like regions of collectin molecules such as C1q (4). Adhesion is synergized by crosstalk with syndecan-1 or HGF R/c-Met, and antagonized by crosstalk with Integrin α 1 β 1 (8-10). In addition to expression on selected hematopoietic cells, α 2 β 1 is present on a wide variety of non-hematopoietic cells (4). Mice deficient in the α 2 subunit have defects in innate immune responses, wound mast cell infiltration and angiogenesis, and platelet responses to collagen (6, 11, 12). In innate immunity, α 2 β 1 binding to C1q initiates the complement cascade and costimulates mast cell activation, triggering neutrophil influx (4, 12).

References:

1. Takada, Y. *et al.* (2007) *Genome Biol.* **8**:215.
2. Luo, B-H. *et al.* (2007) *Annu. Rev. Immunol.* **25**:619.
3. Takada, Y. and M.E. Hemler (1989) *J. Cell Biol.* **109**:397.
4. Zutter, M.M. and B.T. Edelson (2007) *Immunobiology* **212**:343.
5. McCall-Culbreath, K.D. and M.M. Zutter (2008) *Curr. Drug Targets* **9**:139.
6. Sarratt, K.L. *et al.* (2005) *Blood* **106**:1268.
7. Lecut, C. *et al.* (2005) *Thromb. Haemost.* **94**:107.
8. Vuoriluoto, K. *et al.* (2008) *Exp. Cell Res.* **314**:3369.
9. McCall-Culbreath, K.D. *et al.* (2008) *Blood* **111**:3562.
10. Abair, T.D. *et al.* (2008) *Exp. Cell Res.* **314**:3593.
11. Zweers, M. *et al.* (2006) *J. Invest. Dermatol.* **127**:467.
12. Edelson, B.T. *et al.* (2006) *Blood* **107**:143.

Human Integrin $\alpha 2/CD49b$ Alexa Fluor® 594-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 430903

Catalog Number: FAB12332T
100 µg

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