

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Integrin $\alpha 2$ /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 $\alpha 2$ /CD49b Tyr30-Thr1132 Accession # P17301
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 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. ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Integrin $\alpha 2$ is one of twelve integrin family α subunits that share the $\beta 1$ subunit (1-3). Integrin $\alpha 2\beta 1$ is the non-covalent heterodimer of 160 kDa $\alpha 2$ (CD49b) and 130 kDa $\beta 1$ (CD29) type I transmembrane glycoprotein subunits and is one of six very late antigens on activated T cells, designated VLA2 (3). The $\alpha 2$ extracellular domain (ECD) contains an I (inserted) domain which includes the ligand binding site (2, 3). The $\beta 1$ 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 $\alpha 2$ extracellular domain (ECD) shares 83-89% aa sequence identity with mouse, rat, canine, bovine and equine $\alpha 2$. The I domain-containing $\beta 1$ integrins ($\alpha 1\beta 1$, $\alpha 2\beta 1$, $\alpha 10\beta 1$ and $\alpha 11\beta 1$) all bind collagens, with $\alpha 2\beta 1$ preferring collagens I-III (4, 5). Platelet $\alpha 2\beta 1$, also called GPIa, cooperates with another adhesion protein, GPVI, to coordinate platelet collagen binding and activation (3, 6, 7). Other $\alpha 2\beta 1$ 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 $\alpha 1\beta 1$ (8-10). In addition to expression on selected hematopoietic cells, $\alpha 2\beta 1$ is present on a wide variety of non-hematopoietic cells (4). Mice deficient in the $\alpha 2$ subunit have defects in innate immune responses, wound mast cell infiltration and angiogenesis, and platelet responses to collagen (6, 11, 12). In innate immunity, $\alpha 2\beta 1$ binding to C1q initiates the complement cascade and costimulates mast cell activation, triggering neutrophil influx (4, 12).

References:

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6. Sarratt, K.L. *et al.* (2005) *Blood* **106**:1268.
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Human Integrin $\alpha 2/CD49b$ Alexa Fluor® 750-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 430903

Catalog Number: FAB12332S
100 µg

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