

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects human Integrin $\alpha$ 2/CD49b in direct ELISAs and Western blots. In direct ELISAs and Western blots, 50-100% cross-reactivity with recombinant mouse (rm) Integrin $\alpha$ 2 is observed and no cross-reactivity with recombinant human (rh)&nb                 |
| <b>Source</b>             | Monoclonal Rat IgG <sub>2A</sub> Clone # 430907                                                                                                                                                                                                                             |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | Chinese hamster ovary cell line CHO-derived recombinant human Integrin $\alpha$ 2/CD49b<br>Tyr30-Thr1132<br>Accession # P17301                                                                                                                                              |
| <b>Conjugate</b>          | Alexa Fluor 750<br>Excitation Wavelength: 749 nm<br>Emission Wavelength: 775 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*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.

**Western Blot** Optimal dilution of this antibody should be experimentally determined.

## 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  $\alpha$  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).

## PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.