Human Integrin α2/CD49b Antibody

Monoclonal Mouse IgG_{2A} Clone # HAS3

Catalog Number: MAB1233

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Integrin α2/CD49b.
Source	Monoclonal Mouse IgG_{2A} Clone # HAS3
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human keratinocytes
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

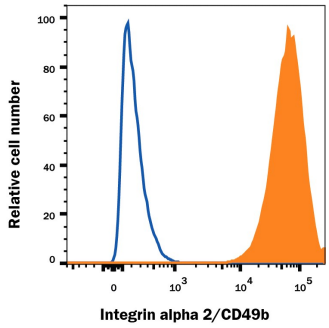
APPLICATIONS

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 µg/10^6 cells	See Below
Immunocytochemistry	15-30 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Immunoprecipitation	Tenchini, M.L. *et al.* (1993) Cell Adhesion Communication **1**:55.	

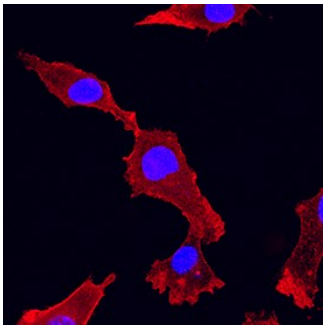
DATA

Flow Cytometry



Detection of Integrin α2/CD49b in HT1080 Human Cell Line by Flow Cytometry. HT1080 human fibrosarcoma cell line was stained with Mouse Anti-Human Integrin α2/CD49b Monoclonal Antibody (Catalog # MAB1233, filled histogram) or isotype control antibody (Catalog # MAB003, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for Staining Membrane-associated Proteins.

Immunocytochemistry



Integrin α2/CD49b in HT1080 Human Cell Line. Integrin α2/CD49b was detected in immersion fixed HT1080 human fibrosarcoma cell line using Mouse Anti-Human Integrin α2/CD49b Monoclonal Antibody (Catalog # MAB1233) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to plasma membranes and cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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BACKGROUND

Integrin α2 is one of twelve integrin family α subunits that share the β1 subunit (1-3). Integrin α2β1 is the non-covalent heterodimer of 160 kDa α2 (CD49b) and 130 kDa β1 (CD29) type I transmembrane glycoprotein subunits and is one of six very late antigens on activated T cells, designated VLA2 (3). The α2 extracellular domain (ECD) contains an I (inserted) domain which includes the ligand binding site (2, 3). The β1 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 α2 extracellular domain (ECD) shares 83-89% aa sequence identity with mouse, rat, canine, bovine and equine α2. The I domain-containing β1 integrins (α1β1, α2β1, α10β1 and α11β1) all bind collagens, with α2β1 preferring collagens I-III (4, 5). Platelet α2β1, also called GPIa, cooperates with another adhesion protein, GPVI, to coordinate platelet collagen binding and activation (3, 6, 7). Other α2β1 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 α1β1 (8-10). In addition to expression on selected hematopoietic cells, α2β1 is present on a wide variety of non-hematopoietic cells (4). Mice deficient in the α2 subunit have defects in innate immune responses, wound mast cell infiltration and angiogenesis, and platelet responses to collagen (6, 11, 12). In innate immunity, α2β1 binding to C1q initiates the complement cascade and costimulates mast cell activation, triggering neutrophil influx (4, 12).

References:

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bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956