Human Integrin α2/CD49b Biotinylated Antibody

Monoclonal Mouse IgG_{2A} Clone # HAS3

Catalog Number: BAM1233

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 BSA as a carrier protein. See Certificate of Analysis for details.

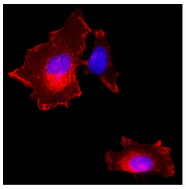
APPLICATIONS

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.*

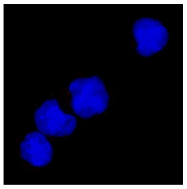
	Recommended Concentration	Sample
Flow Cytometry	2.5 µg/10^6 cells	HT1080 human fibrosarcoma cell line
Immunocytochemistry	8-25 µg/mL	Immersion fixed HT1080 human fibrosarcoma cell line
Immunoprecipitation	Tenchini, M.L. *et al*. (1993) Cell Adhesion Communication **1**:55.	

DATA

Immunocytochemistry



Positive (HT-1080 cells)



Negative (Daudi cells)

Integrin α2/CD49b in HT1080 Human Cell Line.
Integrin α2/CD49b was detected in immersion fixed HT1080 human fibrosarcoma cell line (positive staining) and Daudi human Burkitt's lymphoma cell line (negative staining) using Mouse Anti-Human Integrin α2/CD49b Biotinylated Monoclonal Antibody (Catalog # BAM1233) 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 cell surface and cytoplasm. Staining was performed using our protocol for Fluorescent ICC Staining of Non-adherent Cells.

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.
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.

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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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