Human Integrin αVβ3 Antibody

Monoclonal Mouse IgG_1 Clone # 23C6

Catalog Number: MAB3050

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Integrin αVβ3.
Source	Monoclonal Mouse IgG_1 Clone # 23C6
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human osteoclasts
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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 either lyophilized or 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	2.5 µg/10^6 cells	HUVEC human umbilical vein endothelial cells
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Adhesion Blockade	Horton, M.A. *et al.* (1991) Exp. Cell Res. **195**:368. Bates, R.C. *et al.* (1998) Cell Adhes. Commun. **6**:21.	
Immunohistochemistry	Davies, J. *et al.* (1989) J. Cell Biol. **109**:1817.	
Immunoprecipitation	Davies, J. *et al.* (1989) J. Cell Biol. **109**:1817.	

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.

BACKGROUND

Integrin αVβ3 together with $\alpha IIb\beta_3$, constitutes the only known β3 Integrins (1-3). The non-covalent heterodimer of 170 kDa αV/CD51 and 93 kDa β_3/CD61 subunits shows wide expression, notably by endothelial cells and osteoclasts (2-4). Each subunit has a transmembrane sequence and a short cytoplasmic tail connected to the cytoskeleton. Active cell surface αVβ3 adheres to matrix proteins including vitronectin, fibronectin, fibrinogen and thrombospondin (2, 3). The ligand binding site of αVβ3 is in the N-terminal head region, formed by interaction of the β3 vWFA domain with the αV beta-propeller structure (4). The αV subunit contributes a thigh and a calf region, while the β3 subunit contains a PSI domain and four cysteine-rich I-EGF folds. The αV subunit domains termed thigh, calf-1 and calf-2 generate a “knee” region that is bent when the αVβ3 is in its constitutively inactive state. Activation, either by “inside out” signaling or by Mg^{2+} or Mn^{2+} binding, extends the Integrin to expose its ligand binding site (1, 4). Two splice variants of β3 (b and c) diverge over the last 21 amino acids (aa) and lack cytoplasmic phosphorylation sites (5, 6). Another β3 splice variant diverges after the vWFA domain, producing a soluble 60 kDa form in platelets and endothelial cells (7). αVβ3 is essential for the maturation of osteoclasts and their binding and resorption of bone; it also, however, promotes their apoptosis (8, 9). M-CSF R and αVβ3 share signaling pathways during osteoclastogenesis, and deletion of either molecule causes osteopetrosis (8, 9). Also cell entry of several viruses is mediated by αVβ3 (4, 10). The 962 aa human αV ECD (11) shares 92-95% aa sequence identity with mouse, rat and cow αV while the 685 aa human β_3 ECD (12) shares 95% aa identity with horse and dog, and 89-92% aa identity with mouse, rat and pig β_3.

References:

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