

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Integrin α V β 3.
Source	Monoclonal Mouse IgG ₁ Clone # 23C6
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human osteoclasts
Conjugate	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 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 μ g/10 ⁶ cells	HUVEC human umbilical vein endothelial cells

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Integrin α V β 3 together with α IIb β 3, constitutes the only known β 3 Integrins (1-3). The non-covalent heterodimer of 170 kDa α V/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 α V β 3 adheres to matrix proteins including vitronectin, fibronectin, fibrinogen and thrombospondin (2, 3). The ligand binding site of α V β 3 is in the N-terminal head region, formed by interaction of the β 3 vWFA domain with the α V beta-propeller structure (4). The α V subunit contributes a thigh and a calf region, while the β 3 subunit contains a PSI domain and four cysteine-rich I-EGF folds. The α V subunit domains termed thigh, calf-1 and calf-2 generate a "knee" region that is bent when the α V β 3 is in its constitutively inactive state. Activation, either by "inside out" signaling or by Mg²⁺ or Mn²⁺ binding, extends the Integrin to expose its ligand binding site (1, 4). Two splice variants of β 3 (b and c) diverge over the last 21 amino acids (aa) and lack cytoplasmic phosphorylation sites (5, 6). Another β 3 splice variant diverges after the vWFA domain, producing a soluble 60 kDa form in platelets and endothelial cells (7). α V β 3 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 α V β 3 share signaling pathways during osteoclastogenesis, and deletion of either molecule causes osteopetrosis (8, 9). Also cell entry of several viruses is mediated by α V β 3 (4, 10). The 962 aa human α V ECD (11) shares 92-95% aa sequence identity with mouse, rat and cow α V 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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