

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Integrin $\alpha$ V $\beta$ 3.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 23C6
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Human osteoclasts
<b>Conjugate</b>	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
<b>Formulation</b>	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
<b>Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	HUVEC human umbilical vein endothelial cells

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

#### BACKGROUND

Integrin  $\alpha$ V $\beta$ 3 together with  $\alpha$ IIb $\beta$ 3, constitutes the only known  $\beta$ 3 Integrins (1-3). The non-covalent heterodimer of 170 kDa  $\alpha$ V/CD51 and 93 kDa  $\beta$ 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  $\alpha$ V $\beta$ 3 adheres to matrix proteins including vitronectin, fibronectin, fibrinogen and thrombospondin (2, 3). The ligand binding site of  $\alpha$ V $\beta$ 3 is in the N-terminal head region, formed by interaction of the  $\beta$ 3 vWFA domain with the  $\alpha$ V beta-propeller structure (4). The  $\alpha$ V subunit contributes a thigh and a calf region, while the  $\beta$ 3 subunit contains a PSI domain and four cysteine-rich I-EGF folds. The  $\alpha$ V subunit domains termed thigh, calf-1 and calf-2 generate a "knee" region that is bent when the  $\alpha$ V $\beta$ 3 is in its constitutively inactive state. Activation, either by "inside out" signaling or by Mg<sup>2+</sup> or Mn<sup>2+</sup> binding, extends the Integrin to expose its ligand binding site (1, 4). Two splice variants of  $\beta$ 3 (b and c) diverge over the last 21 amino acids (aa) and lack cytoplasmic phosphorylation sites (5, 6). Another  $\beta$ 3 splice variant diverges after the vWFA domain, producing a soluble 60 kDa form in platelets and endothelial cells (7).  $\alpha$ V $\beta$ 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  $\alpha$ V $\beta$ 3 share signaling pathways during osteoclastogenesis, and deletion of either molecule causes osteopetrosis (8, 9). Also cell entry of several viruses is mediated by  $\alpha$ V $\beta$ 3 (4, 10). The 962 aa human  $\alpha$ V ECD (11) shares 92-95% aa sequence identity with mouse, rat and cow  $\alpha$ V while the 685 aa human  $\beta$ 3 ECD (12) shares 95% aa identity with horse and dog, and 89-92% aa identity with mouse, rat and pig  $\beta$ 3.

#### References:

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