

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	In ELISAs, it detects recombinant human Integrin $\alpha$ V $\beta$ 3 heterodimer, but does not detect recombinant human Integrin $\alpha$ V $\beta$ 1 and Integrin $\alpha$ 6 $\beta$ 1 heterodimers or recombinant human Integrin $\alpha$ V monomer.
<b>Source</b>	Recombinant Monoclonal Rabbit IgG Clone # 2549B
<b>Purification</b>	Protein A or G purified from cell culture supernatant
<b>Immunogen</b>	Chinese Hamster Ovary cell line CHO-derived human Integrin alpha V beta 3. Human Integrin alpha V (Phe31-Val992) and Human Integrin beta 3 (Gly27-Asp718) Accession # NP_002201 and AAA52589
<b>Conjugate</b>	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide.  *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

**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.**

- 12 months from date of receipt, 2 to 8 °C as supplied.

## 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). The 962 aa human  $\alpha$ V ECD(11) shares 92-95% aa sequence identity with mouse, rat and bovine  $\alpha$ V while the 685 aa human  $\beta$ 3 ECD(12) shares 95% aa identity with equine and canine, and 89-92% aa identity with mouse, rat and porcine  $\beta$ 3. 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).  $\alpha$ V $\beta$ 3 is involved in several other signaling pathways by direct interaction with receptor tyrosine kinases and ligands. For example, it cooperates with endothelial cell VEGF R2 in angiogenesis, and with IGF-1 to promote cancer cell proliferation and invasiveness (13, 14). Also, cell entry of several viruses is mediated by  $\alpha$ V $\beta$ 3 (4, 10).

## References:

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# Human Integrin $\alpha V\beta 3$ Alexa Fluor® 700-conjugated Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2549B

Catalog Number: FAB12192N

100  $\mu$ g

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