Human Integrin αVβ3
Alexa Fluor® 594-conjugated Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2549B
Catalog Number: FAB12192T
100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	In ELISAs, it detects recombinant human Integrin αVβ3 heterodimer, but does not detect recombinant human Integrin αVβ1 and Integrin α6β1 heterodimers or recombinant human Integrin αV monomer.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2549B
Purification	Protein A or G purified from cell culture supernatant
Immunogen	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
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	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
Flow Cytometry	0.25-1 µg/10^6 cells	HUVEC human unbilical 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 αVβ3 together with αIIbβ$_3$, 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). The 962 aa human αV ECD(11) shares 92-95% aa sequence identity with mouse, rat and bovine αV while the 685 aa human β$_3$ ECD(12) shares 95% aa identity with equine and canine, and 89-92% aa identity with mouse, rat and porcine β$_3$. 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). αVβ3 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 αVβ3 (4, 10).

References:

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449