Integrin Alphav, Beta3 (ITGB3) Active Protein

PRODUCT OVERVIEW

Product Name	Integrin alphaV, beta3 (ITGB3), Active Protein
Full Product Name	Integrin alphaV, beta3, Recombinant, Human
Product Gene Name	ITGB3 active protein
Form/Format	Supplied as a lyophilized powder from 50mM Tris, pH 7.4, 150mM sodium chloride, 0.5mM calcium chloride. Reconstitute with 500ul sterile PBS.
Purity/Purification	Highly Purified >90%, as determined by SDS-PAGE under reducing conditions and visualized by silver stain.
Concentration	~0.1mg/ml (after reconstitution) (lot specific)
Preparation and Storage	Lyophilized powder may be stored at -20°C. Stable for 6 months after receipt at -20°C. Reconstitute with sterile PBS. Aliquot to avoid repeated freezing and thawing. Store at -20°C. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Further dilutions can be made in assay buffer.
Molecular Weight	Predicted MW: 110.5 kD (?V subunit), 80.8 kD(?3 subunit) Observed MW (SDS-PAGE): 105150 kD, reducing conditions
Chromosome Location	Chromosome: 12; NC_010454.3 (16718915..16775379, complement). Location: chromosome: 12
Active Protein Note	Protein activity can be an ambiguous term. Please refer to the data sheet or inquire with Technical Support to determine the definition of activity for this product.
Source	Recombinant, CHO cells
Activity	Measured by its ability in functional ELISA. Immobilized recombinant human Vitronectin at 1ug/ml can bind rhIntegrin aVb3 with apparent Kd <10nM.
Protein Construct (co-expressed in CHO cells)	Extracellular domain of human Integrin alphaV subunit (Phe31-Val992; Accession # NP_002201) + His-Pro + GGGSGGGS + Acidic Tail Extracellular domain of beta3 subunit (Gly27-Asp718; Accession # AAA52589) + His-Pro + GGGSGGGS + Basic Tail
Species	Human
Endotoxin	1EU per ug. (LAL)
Product Categories/Family for ITGB3 active protein	Molecular Biology; MB-Integrins
Applications Tested/Suitable for ITGB3 active protein	ELISA (EL/EIA), Western Blot (WB)
Application Notes for ITGB3 active protein	Suitable for use in ELISA and Western Blot. Band observed at 110-155kD under reducing conditions. Recommended Dilutions: Optimal dilutions to be determined by the researcher.

Related Product Information for ITGB3 active protein	Integrin alphaVbeta3 together with aIIb-beta3, constitutes the only known beta3 Integrins. The non-covalent heterodimer of 170kD alphaV/CD51 and 93kD beta3/CD61 subunits show wide expression, notably by endothelial cells and osteoclasts. Each subunit has a transmembrane sequence and a short cytoplasmic tail connected to the cytoskeleton. Active cell surface alphaVbeta3 adheres to matrix proteins including vitronectin, fibronectin, fibrinogen and thrombospondin. The ligand binding site of alphaVbeta3 is in the N-terminal head region, formed by interaction of the beta3 vWFA domain with the alphaV beta-propeller structure. The alphaV subunit contributes a thigh and a calf region, while the beta3 subunit contains a PSI domain and four cysteine-rich I-EGF folds. The alphaV subunit domains termed thigh, calf-1 and calf-2 generate a "knee" region that is bent when the alphaVbeta3 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. Two splice variants of beta3 (b and c) diverge over the last 21 amino acids (aa) and lack cytoplasmic phosphorylation sites. Another beta3 splice variant diverges after the vWFA domain, producing a soluble 60kD form in platelets and endothelial cells. Alpha Vbeta3 is essential for the maturation of osteoclasts and their binding and resorption of bone; it also, however, promotes their apoptosis. M-CSF R and alphaVbeta3 share signaling pathways during osteoclastogenesis, and deletion of either molecule causes osteopetrosis. Also cell entry of several viruses is mediated by alphaVbeta3. The 962aa human alphaV ECD11 shares 92-95% aa sequence identity with mouse, rat and bovine alphaV while the 685 aa human beta3 ECD12 shares 95% aa identity with equine and canine, and 89-92% aa identity with mouse, rat and porcine beta3.
Other Notes	Small volumes of ITGB3 active protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for ITGB3 purchase	MBS636418 is an active protein targeting ITGB3. Also known as Integrin alphaV, beta3, Recombinant, Human.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for ITGB3. It may not necessarily be applicable to this product.

NCBI GI #	47522830
NCBI GeneID	397063
NCBI Accession #	NP_999167.1
GenBank Nucleotide #	NM_214002.1
NCBI Official Full Name	integrin beta-3
NCBI Official Symbol	ITGB3
NCBI Official Synonym Symbols	CD61
Protein Family	Integrin
NCBI Protein Information	integrin beta-3; beta3 integrin; integrin beta 3; glycoprotein GPIIIa
Research Articles on ITGB3	**1.** The observed effects of shear stress on integrin alpha(v)beta(3) and p38 MAPK activation, as well as on FGF-2 release could be mimicked by application of pancreatic elastase to static endothelial cells.
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