Recombinant Cynomolgus Monkey Integrin αVβ3

Catalog Number: 10426-AV

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived cynomolgus monkey Integrin alpha V beta 3 protein

Cynomolgus Monkey Integrin αV (Phe31-Val992) Accession # XP_005573729.1	His-Pro	2x GGGSGGGS-Acidic Tail	6-His tag
Cynomolgus Monkey Integrin ß3 (Gly27-Asp718) Accession # XP_005584667.1	His-Pro	2x GGGSGGGS-Basic tail	HA tag

N-terminus C-terminus

N-terminal Sequence Analysis

Phe31 (Integrin αV) & Gly27 (Integrin β3)

Predicted Molecular Mass

115 kDa (Integrin αV) & 86 kDa (Integrin β3)

SPECIFICATIONS

SDS-PAGE

105-160 kDa, under reducing conditions

Activity

Measured by its binding ability in a functional ELISA.
When Recombinant Human Vitronectin (Catalog # 2308-VN) is immobilized at 2 µg/mL (100 µL/well), Recombinant Cynomolgus Monkey Integrin αVβ3 (Catalog # 10426-AV) binds with an ED_{50} of 0.06-0.72 µg/mL.

Endotoxin Level

<0.10 EU per 1 µg of the protein by the LAL method.

Purity

>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation

Supplied as a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping

The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

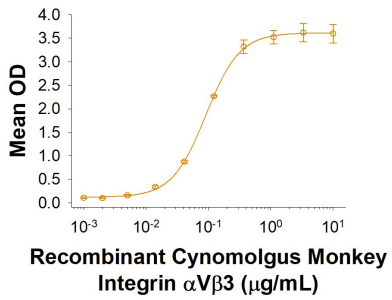
Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 6 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.
- 3 months, -20 to -70 °C under sterile conditions after opening.

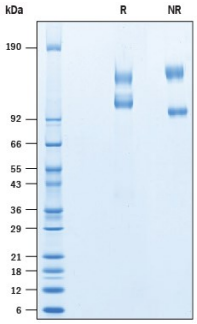
DATA

Binding Activity



When Recombinant Human Vitronectin (Catalog # Catalog # 2308-VN) is immobilized at 2 µg/mL (100 µL/well), Recombinant Cynomolgus Monkey Integrin aVß3 (Catalog # 10426-AV) binds with an ED_{50} of 0.06-0.72 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Cynomolgus Monkey Integrin αVβ3 Protein (Catalog # 10426-AV) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 105-160 kDa.

bio-techne®
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

Recombinant Cynomolgus Monkey Integrin αVβ3

Catalog Number: 10426-AV

BACKGROUND

Integrin αVβ3 together with αIIbβ3, constitutes the only known β3 Integrins (13). The noncovalent heterodimer of 170 kDa αV/CD51 and 93 kDa β3/CD61 subunits shows wide expression, notably by endothelial cells and osteoclasts (24). 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 Nterminal head region, formed by interaction of the β3 vWFA domain with the αV betapropeller structure (4). The αV subunit contributes a "thigh and a calf" region, while the β3 subunit contains a PSI domain and four cysteinerich IEGF folds. The αV subunit domains termed thigh, calf1 and calf2 generate a "knee" region that is bent when the αVβ3 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). Within the extracellular domain (ECD), cynomolgus αV shares 99% amino acid (aa) sequence identity with the 962 aa human αV, while cynomolgus β3 ECD shares almost 100% aa sequence identity with the 692 aa human β3 ECD. 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, as well as promotes their apoptosis (8, 9). MCSF R and αVβ3 share signaling pathways during osteoclastogenesis, and deletion of either molecule causes osteopetrosis (8, 9). Cell entry of several viruses is mediated by αVβ3 (4, 10). 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 IGF1 to promote cancer cell proliferation and invasiveness (11, 12).

References:

1. Hynes, R. O. (2002) Cell **110**:673.
2. Serini, G. *et al.* (2006) Exp. Cell Res. **312**:651.
3. Ross, F. P. and S. L. Teitelbaum (2005) Immunol. Rev. **208**:88.
4. Xiong, J. *et al.* (2001) Science **294**:339.
5. Kumar, C. S. *et al.* (1987) J. Biol. Chem. **272**:16390.
6. vanKuppevelt, H. *et al.* (1989) Proc. Natl. Acad. Sci. USA **86**:5415.
7. Djaffar, I. *et al.* (1994) Biochem. J. **300**:69.
8. McHugh, K. P. *et al.* (2000) J. Clin. Invest. **105**:433.
9. Faccio, R. *et al.* (2003) J. Clin. Invest. **111**:749.
10. Chu, J. J. and M. Ng (2004) J. Biol. Chem. **279**:54533.
11. Somanath, P.R. *et al.* (2009) Angiogenesis **12**:177.
12. Saegusa, J. *et al.* (2009) J. Biol. Chem. **284**:24106.

bio-techne®
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