# Recombinant Cynomolgus Monkey Integrin α4β1

Catalog Number: 10527-A4

## DESCRIPTION

**Source**

Chinese Hamster Ovary cell line, CHO-derived cynomolgus monkey Integrin alpha 4 beta 1 protein

| | | | |
|---|---|---|---|
| Cynomolgus Monkey Integrin α4 (Tyr34-Gln970) Accession # XP_005573683.1 | HP + 2x GGGSGGGS | Acidic Tail | 6-His tag |
| Cynomolgus Monkey Integrin β1 (Gln21-Asp728) Accession # XP_005564991.1 | HP + 2x GGGSGGGS | Basic Tail | HA-tag |

N-terminus C-terminus

| | |
|---|---|
| **N-terminal Sequence Analysis** | Tyr34 (Integhrin alpha 4) & Gln21 inferred from enzymatic pyroglutamate treatment revealing Thr22 (Integrin beta 1) |
| **Predicted Molecular Mass** | 113 kDa (Integrin alpha 4) & 88 kDa (Integrin beta 1) |

## SPECIFICATIONS

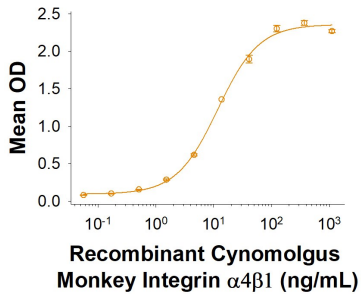
| | |
|---|---|
| **SDS-PAGE** | 120-160 kDa, under reducing conditions |
| **Activity** | Measured by its binding ability in a functional ELISA.<br>When Recombinant Human VCAM-1/CD106 Fc Chimera (Catalog # 862-VC) is immobilized at 1 µg/mL (100 µL/well), Recombinant Cynomolgus Monkey Integrin α4β1 (Catalog # 10527-A4) binds with an $ED_{50}$ of 4-40 ng/mL. |
| **Endotoxin Level** | <1.0 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

| | |
|---|---|
| **Reconstitution** | Reconstitute at 250 µg/mL in PBS. |
| **Shipping** | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

## DATA

**Binding Activity**




When Recombinant Human VCAM-1/CD106 Fc Chimera (Catalog # 862-VC) is immobilized at 1 µg/mL (100 µL/well), Recombinant Cynomolgus Monkey Integrin α4β1 (Catalog # 10527-A4) binds with an $ED_{50}$ of 4-40 ng/mL.



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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

# Recombinant Cynomolgus Monkey Integrin α4β1

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## BACKGROUND

Integrin alpha 4 beta 1, also called VLA4, is an integrin family adhesion receptor that shares the beta 1 subunit with eleven other family members and the alpha 4 subunit with integrin alpha 4 beta 7 (1-4). The non-covalent heterodimer of 150 kDa alpha 4/CD49d and 130 kDa beta 1/CD29 type I transmembrane glycoprotein subunits mediates cell adhesion to VCAM-1/CD106 on other cells and the CS-1 fragment of fibronectin in the extracellular matrix (2-4). The alpha 4 extracellular domain (ECD) contains an N-terminal beta -propeller structure, followed by domains termed thigh, calf-1 and calf-2 (1). The beta 1 ECD contains a vWFA domain, which interacts with the alpha 4 beta -propeller to form a binding domain when the dimer is in active, extended and open conformation. Each subunit has a transmembrane sequence and a short cytoplasmic tail. Within the ECD, cynomolgus alpha 4 shares 97% sequence identy with human alpha 4, while cynomolgus beta 1 shares 99.9% sequence identity with human beta 1 ECD. Five alternate splice forms of the human beta 1 cytoplasmic domain, including one antagonistic form, vary by 12 to 48 aa and show differential expression patterns (5). Leukocytes (except for neutrophils), erythroid precursors and some non-hematopoietic cells such as epicardial, endothelial and smooth muscle precursors, Schwann cells, and chorionic cells express alpha 4 beta 1 (6-10). Deletion is lethal in the mouse embryo due to faulty placentation and development of the epicardium and coronary vessels (7, 10). In the adult, alpha 4 beta 1 primarily regulates immune cell migration (11-13). Circulating leukocyte alpha 4 beta 1 is rapidly activated by inflamed endothelial cells that present VCAM-1 and chemokines such as SDF-1 (11). This activation facilitates rolling, firm adhesion, and extravasation. Interfering with leukocyte migration via the therapeutic alpha 4 beta 1antibody Natalizumab can reduce the severity of autoimmune disorders such as multiple sclerosis (12). Natalizumab can also mobilize hematopoietic precursors from the bone marrow by impeding their interaction with stromal cell VCAM-1 (8, 12). During immune cell activation, alpha 4 beta 1 can function as a costimulatory molecule (13, 14).

**References:**

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