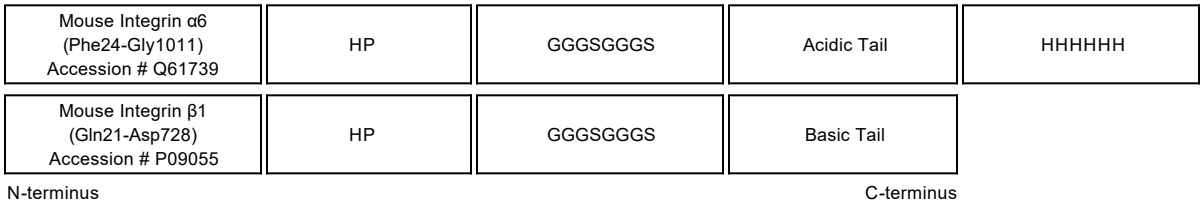
Recombinant Mouse Integrin α6β1

Catalog Number: 7810-A6

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived



N-terminal Sequence Analysis	Phe24 (α6 subunit) & Gln21 predicted: No results obtained, sequencing might be blocked (β1 subunit)
Structure / Form	Noncovalently-linked heterodimer
Predicted Molecular Mass	119 kDa (α6 subunit) & 86.4 kDa (β1 subunit)

SPECIFICATIONS

SDS-PAGE	105-120 & 125-150 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Laminin α4 (Catalog # 7340-A4) is coated at 5 µg/mL, Recombinant Mouse Integrin α6β1 binds with an apparent K_D <5nM.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
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 at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Integrin α6β1, also called platelet glycoprotein GPIc-IIa, is a laminin binding integrin that is expressed on T cells, monocytes, endothelial cells, stem cells, and platelets (1-9). The non-covalent heterodimer is composed of ~150 kDa α6/CD49f and 130 kDa β1/CD29 type I transmembrane glycoprotein subunits (2). While α6 pairs only with β1 or β4, twelve integrins share the β1 subunit (1-5). The α6 subunit is cleaved into extracellular heavy and transmembrane light chains (3). Alternative splicing in the human α6 extracellular domain (ECD) at amino acid (aa) 216 creates X1 (ubiquitous), X2 and X1X2 isoforms, while splicing at a mouse or human cytoplasmic site creates A and B isoforms (10, 11). These forms do not appear to alter the binding specificity (4, 10, 11). The β1 ECD contains a vWFA domain, which participates in binding. Each subunit then has a transmembrane sequence and a short cytoplasmic tail. The dimer is folded when it is least active. Divalent cations and intracellular (inside-out) signaling convert it to its most active, extended and open conformation (1, 2). The mouse α6 heavy chain shares 98% aa identity with rat and 92-93% with human (X1), bovine, and canine α6, and the mouse β1 ECD shares 98% aa identity with rat and 93-94% with human, bovine, porcine, ovine, canine and feline β1. α6β1 shows broad specificity for adhesion to laminin isoforms (4, 10). Its expression on human and mouse pluripotent stem cells is important for attachment, expansion, and self-renewal on LN-511 (laminin $\alpha_5\beta_1\gamma_1$) (6, 7). The secreted protein Netrin-4 and the laminin γ_1 subunit form an adhesion-activating complex with α6β1 on mouse neural stem cells and human lymphatic endothelial cells that promotes lymphangiogenesis (8, 9). α6β1 up-regulation on cancers such as prostate, glioma, and hepatoma is reported to enhance tumorigenicity, motility, invasion and metastasis (12-14). α6β1 cleavage via uPA (urokinase-type plasminogen activator) facilitates tumorigenicity in prostate cancers, and interaction of hepatoma α6β1 with EMMPRIN/CD147 may also enhance tumorigenicity by inducing uPA and other metalloproteinases (12, 13).

References:

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