

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived				
	Mouse Integrin $\alpha 11$ (Phe23-Pro1141) Accession # P61622	HP	GGSGGGGS	Acidic Tail	HHHHHH
	Mouse Integrin $\beta 1$ (Gln21-Asp728) Accession # P09055	HP	GGSGGGGS	Basic Tail	
	N-terminus		C-terminus		

N-terminal Sequence Phe23 ($\alpha 11$ subunit) & Gln21 predicted: No results obtained, sequencing might be blocked ($\beta 1$ subunit)

Analysis

Structure / Form Noncovalently-linked heterodimer

Predicted Molecular Mass 134 kDa ($\alpha 11$ subunit) & 86.5 kDa ($\beta 1$ subunit)

SPECIFICATIONS

SDS-PAGE 115-135 kDa & 155-175 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
When Collagen I is coated at 10 $\mu\text{g/mL}$, Recombinant Mouse Integrin $\alpha 11\beta 1$ binds with an apparent $K_D < 20$ nM.

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 300 $\mu\text{g/mL}$ 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 $^{\circ}\text{C}$ as supplied.
- 1 month, 2 to 8 $^{\circ}\text{C}$ under sterile conditions after reconstitution.
- 3 months, -20 to -70 $^{\circ}\text{C}$ under sterile conditions after reconstitution.

BACKGROUND

Integrin $\alpha 11\beta 1$ is a noncovalent heterodimeric collagen receptor that contains a 150 kDa $\alpha 11$ subunit complexed to a 130 kDa $\beta 1/\text{CD}29$ subunit. $\alpha 11\beta 1$ is the only known $\alpha 11$ -containing integrin. By contrast, at least twelve α -integrins share the $\beta 1$ subunit (1-5). $\alpha 11\beta 1$ is expressed on fibroblasts from cornea, skin and periodontal ligament (3-9). It is also expressed on mesenchymal stem cells and is considered a marker for non-muscle mesenchymal tissue (3, 8-10). Expression of $\alpha 11\beta 1$ is stimulated by TGF- $\beta 1$, activin A, and type I interferons, and down-regulated by FGF-2 (6, 9-11). The $\alpha 11$ extracellular domain (ECD) contains a vWFA domain which includes the ligand binding site (2-5). The $\beta 1$ ECD also contains a vWFA domain, which participates in binding. Each subunit has a transmembrane sequence and a short cytoplasmic tail. The dimer assumes a folded configuration at "rest". Divalent cations and intracellular (inside-out) signaling convert it to an active, extended and open conformation (1, 2). The 1119 amino acid (aa) mouse $\alpha 11$ ECD shares 90% and 95% aa sequence identity with rat and human $\alpha 11$, respectively, while the 708 aa mouse $\beta 1$ ECD shares 98% aa identity with rat and 93-94% aa identity with human, bovine, porcine, ovine, canine and feline $\beta 1$. I domain-containing $\beta 1$ integrins $\alpha 1\beta 1$, $\alpha 2\beta 1$, $\alpha 10\beta 1$ and $\alpha 11\beta 1$ all bind collagens (3-5). $\alpha 11\beta 1$ preferentially binds interstitial collagens such as type I (5, 8, 12). It can contract collagen matrices and influence inflammatory edema (3, 13). Depending on context, $\alpha 11\beta 1$ can support or inhibit cell migration on collagen (7, 8). It is frequently up-regulated in the stroma of lung adenocarcinomas and enhances tumorigenicity (14, 15). $\alpha 11\beta 1$ is also involved in myofibroblast differentiation in human corneal fibroblasts and human cardiac fibroblasts (9, 16).

References:

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