Recombinant Human Integrin α6β4
X1 isoform
Catalog Number: 5497-A6

DESCRIPTION

Source
Chinese Hamster Ovary cell line, CHO-derived

<table>
<thead>
<tr>
<th>Human Integrin α6 (Phe24-Lys878)</th>
<th>Acetic Tail</th>
<th>HHHHHH</th>
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<tbody>
<tr>
<td>Accession # NP_000201</td>
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<tr>
<th>Human Integrin β4 (Asn28-Ser710)</th>
<th>Basic Tail</th>
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<td>Accession # P16144</td>
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N-terminal Sequence
Phe24 (α6) & Asn28 (β4)

Predicted Molecular Mass
104 kDa (α6) & 84.8 kDa (β4)

SPECIFICATIONS

SDS-PAGE
125-135 kDa (α6) & 100-110 kDa (β4), reducing conditions

Activity
Measured by its binding ability in a functional ELISA.
When Mouse Laminin I (Catalog # 3400-010-01) is coated at 10 μg/mL, Recombinant Human Integrin α6β4 binds with an apparent K<sub>d</sub> < 5 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 200 μg/mL in sterile 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 α6β4 is an epithelial and Schwann cell laminin-binding integrin. While α6 can also pair with β1, β4 pairs only with α6 (1-3). Expression of the non-covalent heterodimer composed of a ~150 kDa α6/CD49f and 150-200 kDa β4/CD104 type I transmembrane glycoprotein subunit is required for hemidesmosome formation (2, 4). The α6 subunit contains an I (inhibitory) domain and a cleavage site that creates extracellular heavy and transmembrane light chains. Alternative splicing in the α6 extracellular domain (ECD) at amino acid (aa) 216 creates X1 (ubiquitous), X2 and X1X2 isoforms, while splicing at a cytoplasmic site creates A and B isoforms (5, 6). The cytoplasmic domain of β4 is unusually long (~1000 aa) and contains four type III fibronectin repeats that bind intracellular hemidesmosomal components (2, 4, 7). Alternative splicing between repeats # 2 and 3 creates A, B, C and (truncated) D isoforms (7). All ECD variants share similar ligand binding characteristics, while the cytoplasmic variants differ in tissue distribution and signaling pathways (5-7). The 683 aa human α6X1 heavy chain shares 94-95% aa identity with mouse, rat, bovine, and canine α6, and the 683 aa human β4 ECD shares 87-92% aa identity with mouse, rat, bovine, and equine β4. Mutation of α6β4 can cause EB-PA, or epidermolysis bullosa (detachment of epidermis from basement membrane) with pyloric atresia, that is neonatally lethal if severe (8). On Schwann cells, α6β4 cooperates with dystroglycan to stabilize the myelin sheath, and mediates attachment to the basal lamina (9, 10). High α6β4 expression correlates with invasiveness of carcinomas (2). EGF R-induced phosphorylation of β4 disrupts hemidesmosomes and allows tumor cell migration (11, 12). α6β4 signaling can also amplify tumor production of VEGF and ErbB proteins (13, 14).

References: