Recombinant Human Integrin αVβ8

Catalog Number: 4135-AV

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human Integrin alpha V beta 8 protein

Human Integrin αV (Phe31-Val992) Accession # NP_002201.1	His-Pro	GGGSGGGS	Acidic Tail
Human Integrin β8 (Glu43-Arg684) Accession # P26012.1	His-Pro	GGGSGGGS	Basic Tail

N-terminus C-terminus

N-terminal Sequence Analysis	Phe31 (αV subunit) & Glu43 (β8 subunit)
Predicted Molecular Mass	110.5 kDa (αV subunit), 75.3 kDa (β8 subunit)

SPECIFICATIONS

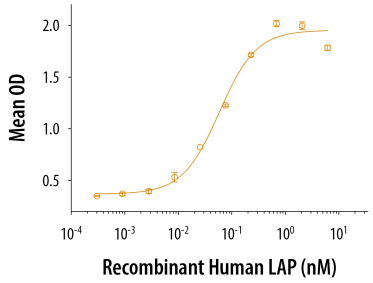
SDS-PAGE	130-155 kDa and 85-100 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human Integrin αVβ8 at 2 µg/mL can bind recombinant human Lap with an apparent K_d <0.5 nM.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
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 Tris, NaCl and $MgCl_2$. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 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. • 2 weeks, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



Bioactivity of Human Integrin αVβ8 Recombinant human Integrin αVβ8 (Catalog # 4135-AV) binds recombinant human LAP (Catalog # 246-LP) in a functional ELISA. The estimated K_d for this interaction is < 0.5 nM.

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BACKGROUND

Integrin αVβ8 is one of five αV integrins and the only known β8 integrin (1-3). The non-covalent heterodimer of 170 kDa αV and ~90 kDa β8 integrin type I transmembrane glycoprotein subunits is expressed in yolk sac, placenta, brain perivascular astrocytes, Schwann cells, renal glomerular mesangial cells and pulmonary epithelial cells (3-7). Unlike other αV integrins, αVβ8 does not appear to assume different activation states, and the cytoplasmic tail does not connect to the cytoskeleton (3, 8). It binds ligands containing an RGD motif, including vitronectin, fibrin and the latency associated peptide (LAP) of the latent TGF-β complex (7-12). High affinity binding of αVβ8 to LAP allows proteolytic cleavage by MT1-MMP, which releases active TGF-β. This mechanism differs from that of αVβ6, the other αV integrin which can activate TGF-β from latency through non-proteolytic mechanisms (13). Downstream effects of TGF-β activation include control of cell growth and associated vascularization (10-13). Deletion of either αV or β8 reveals that αVβ8 is required for vascular morphogenesis in the embryonic brain and yolk sac (4, 14, 15). The 962 aa human αV extracellular domain (ECD) shares 92-95% aa sequence identity with mouse, rat and cow αV, while the 642 aa human β8 ECD shares 92%, 92%, 89%, 87% and 87% aa identity with cow, dog, rabbit, mouse and rat β8, respectively. The β8 ECD of β8 shows low (~35%) aa identity with other integrin β subunits, and the cytoplasmic tail is unlike any other integrin. The αV ECD contains an N-terminal β- propeller structure, followed by domains termed thigh, calf-1 and calf-2 (1). The β8 ECD contains a vWFA domain, which interacts with the αVβ-propeller to form a binding domain. Each subunit has a transmembrane sequence and a short cytoplasmic tail.

References:

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