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Integrin alpha 4 Antibody

Catalog # ASC10780

Product Information

Application	WB, IF, E
Primary Accession	P13612
Other Accession	NP_000876, 67191027
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	114900
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Integrin alpha 4 antibody can be used for the detection of Integrin alpha 4 by Western blot at 1 □g/mL. Despite its predicted molecular weight, Integrin alpha4 will often run at higher molecular weight in SDS-PAGE. Antibody can also be used for immunoflourescence starting at 2 □g/mL.

Additional Information

Gene ID	3676
Other Names	Integrin alpha-4, CD49 antigen-like family member D, Integrin alpha-IV, VLA-4 subunit alpha, CD49d, ITGA4, CD49D
Target/Specificity	ITGA4; At least two isoforms are known to exist. The immunogen to this antibody is within the Integrin alpha4 recombinant protein fragment and thus will recognize it.
Reconstitution & Storage	Integrin alpha 4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Integrin alpha 4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ITGA4
Synonyms	CD49D
Function	Integrins alpha-4/beta-1 (VLA-4) and alpha-4/beta-7 are receptors for fibronectin. They recognize one or more domains within the alternatively spliced CS-1 and CS-5 regions of fibronectin. They are also receptors for VCAM1. Integrin alpha-4/beta-1 recognizes the sequence Q-I-D-S in VCAM1.

	Integrin alpha-4/beta-7 is also a receptor for MADCAM1. It recognizes the sequence L-D-T in MADCAM1. On activated endothelial cells integrin VLA-4 triggers homotypic aggregation for most VLA-4-positive leukocyte cell lines. It may also participate in cytolytic T-cell interactions with target cells. ITGA4:ITGB1 binds to fractalkine (CX3CL1) and may act as its coreceptor in CX3CR1-dependent fractalkine signaling (PubMed:23125415). ITGA4:ITGB1 binds to PLA2G2A via a site (site 2) which is distinct from the classical ligand-binding site (site 1) and this induces integrin conformational changes and enhanced ligand binding to site 1 (PubMed:18635536, PubMed:25398877). Integrin ITGA4:ITGB1 represses PRKCA-mediated L-type voltage-gated channel Ca(2+) influx and ROCK-mediated calcium sensitivity in vascular smooth muscle cells via its interaction with SVEP1, thereby inhibiting vasocontraction (PubMed:35802072).
Cellular Location	Membrane; Single-pass type I membrane protein
Tissue Location	Expressed in vascular smooth muscle cells (at protein level).

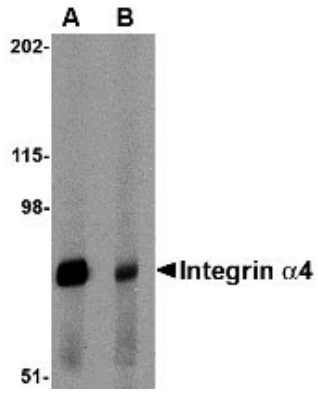
Background

Integrin alpha 4 Antibody: The integrin alpha 4 (also known as CD49d and ITGA4) belongs to the integrin alpha chain family of proteins. Integrins are heterodimeric integral membrane proteins composed of an alpha and beta chains. Alpha4 chain associates with either beta1 or beta7 chain. It has been demonstrated that the putative ligand-binding sites of both integrin alpha4beta1 and alpha4beta7 is located on the alpha4 chain. These ligands included Madcam, VCAM, and fibronectin. Madcam is known as the principal ligand for integrin alpha4beta7. Recently it was also demonstrated that HIV-1 envelope can mimic Madcam by binding to and signaling though integrin alpha4beta7, the gut mucosal homing receptor for peripheral T cells.

References

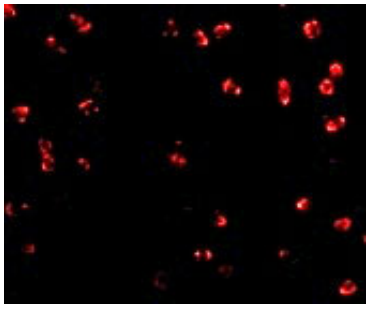
Wegener KL and Campbell ID. Transmembrane and cytoplasmic domains in integrin activation and protein-protein interactions. Mol. Membr. Biol.2008; 25:376-87.
Kamata T, Puzon W, and Takada Y. Identification of putative ligand-binding sites of the integrin alpha 4 beta 1 (VLA-4, CD49d/CD29). Biochem J.1995; 305:945-51.
Berlin C, Berg EL, Briskin MJ, et al. Alpha 4 beta 7 integrin mediates lymphocyte binding to the mucosal vascular addressin MAdCAM-1. Cell1993; 74:185-95.
Pulido R, Elices MJ, Campanero MR, et al. Functional evidence for three distinct and independently inhibitable adhesion activities mediated by the human integrin VLA-4. Correlation with distinct alpha 4 epitopes. J. Biol. Chem.1991; 266:10241-5.

Images



Western blot analysis of Integrin alpha 4 in rat spleen tissue lysate with Integrin alpha 4 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.

Immunofluorescence of Integrin alpha 4 in Jurkat cells



with Integrin alpha 4 antibody at 2 µg/mL.

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