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ITGB1 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1682a

Specification

ITGB1 Antibody - Product Information

Application	**E, WB, IHC, FC**
Primary Accession	P05556
Reactivity	**Human, Monkey**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG1**
Calculated MW	**88.4kDa KDa**

Description
Integrins are heterodimeric proteins made up of alpha and beta subunits. At least 18 alpha and 8 beta subunits have been described in mammals. Integrin family members are membrane receptors involved in cell adhesion and recognition in a variety of processes including embryogenesis, hemostasis, tissue repair, immune response and metastatic diffusion of tumor cells. This gene encodes a beta subunit. Multiple alternatively spliced transcript variants which encode different protein isoforms have been found for this gene.

Immunogen
Purified recombinant fragment of human ITGB1 expressed in E. Coli.

Formulation
Purified antibody in PBS with 0.05% sodium azide

ITGB1 Antibody - Additional Information

Gene ID 3688

Other Names
Integrin beta-1, Fibronectin receptor subunit beta, Glycoprotein IIa, GPIIA, VLA-4 subunit beta, CD29, ITGB1, FNRB, MDF2, MSK12

Dilution
E~~1/10000
WB~~1/500 - 1/2000
IHC~~1/200 - 1/1000
FC~~1/200 - 1/400

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
ITGB1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

ITGB1 Antibody - Protein Information

Name ITGB1 (HGNC:6153)

Synonyms FNRB, MDF2, MSK12

Function
Integrins alpha-1/beta-1, alpha-2/beta-1, alpha-10/beta-1 and alpha-11/beta-1 are receptors for collagen. Integrins alpha-1/beta-1 and alpha-2/beta-2 recognize the proline-hydroxylated sequence G-F-P-G- E-R in collagen. Integrins alpha-2/beta-1, alpha-3/beta-1, alpha- 4/beta-1, alpha-5/beta-1, alpha-8/beta-1, alpha-10/beta-1, alpha- 11/beta-1 and alpha-V/beta-1 are receptors for fibronectin. Alpha- 4/beta-1 recognizes one or more domains within the alternatively spliced CS-1 and CS-5 regions of fibronectin. Integrin alpha-5/beta-1 is a receptor for fibrinogen. Integrin alpha-1/beta-1, alpha-2/beta-1, alpha-6/beta-1 and alpha-7/beta-1 are receptors for lamimin. Integrin alpha-6/beta-1 (ITGA6:ITGB1) is present in oocytes and is involved in sperm-egg fusion (By similarity). Integrin alpha-4/beta-1 is a receptor for VCAM1. It recognizes the sequence Q-I-D-S in VCAM1. Integrin alpha- 9/beta-1 is a receptor for VCAM1, cytotactin and osteopontin. It recognizes the sequence A-E-I-D-G-I-E-L in cytotactin. Integrin alpha- 3/beta-1 is a receptor for epiligrin, thrombospondin and CSPG4. Alpha- 3/beta-1 may mediate with LGALS3 the stimulation by CSPG4 of endothelial cells migration. Integrin alpha-V/beta-1 is a receptor for vitronectin. Beta-1 integrins recognize the sequence R-G-D in a wide array of ligands. When associated with alpha-7 integrin, regulates cell adhesion and laminin matrix deposition. Involved in promoting endothelial cell motility and angiogenesis. Involved in osteoblast compaction through the fibronectin fibrillogenesis cell-mediated matrix assembly process and the formation of mineralized bone nodules. May be involved in up-regulation of the activity of kinases such as PKC via binding to KRT1. Together with KRT1 and RACK1, serves as a platform for SRC activation or inactivation. Plays a mechanistic adhesive role during telophase, required for the successful completion of cytokinesis. Integrin alpha-3/beta-1 provides a docking site for FAP (seprase) at invadopodia plasma membranes in a collagen-dependent manner and hence may participate in the adhesion, formation of invadopodia and matrix degradation processes, promoting cell invasion. ITGA4:ITGB1 binds to fractalkine (CX3CL1) and may act as its coreceptor in CX3CR1-dependent fractalkine signaling (PubMed:23125415, PubMed:24789099). ITGA4:ITGB1 and ITGA5:ITGB1 bind 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). ITGA5:ITGB1 acts as a receptor for fibrillin-1 (FBN1) and mediates R-G- D-dependent cell adhesion to FBN1 (PubMed:12807887, PubMed:17158881). ITGA5:ITGB1 acts as a receptor for fibronectin FN1 and mediates R-G-D- dependent cell adhesion to FN1 (PubMed:33962943). ITGA5:ITGB1 is a receptor for IL1B and binding is essential for IL1B signaling (PubMed:29030430). ITGA5:ITGB3 is a receptor for soluble CD40LG and is required for CD40/CD40LG signaling (PubMed:31331973). Plays an important role in myoblast differentiation and fusion during skeletal myogenesis (By similarity). ITGA9:ITGB1 may play a crucial role in SVEP1/polydom-mediated myoblast cell adhesion (By similarity). Integrins ITGA9:ITGB1 and ITGA4:ITGB1 repress PRKCA-mediated L-type voltage-gated channel Ca(2+) influx and ROCK-mediated calcium sensitivity in vascular smooth muscle cells via their interaction with SVEP1, thereby inhibit vasocontraction (PubMed:35802072).

Cellular Location
Cell membrane; Single-pass type I membrane protein. Cell projection, invadopodium membrane;

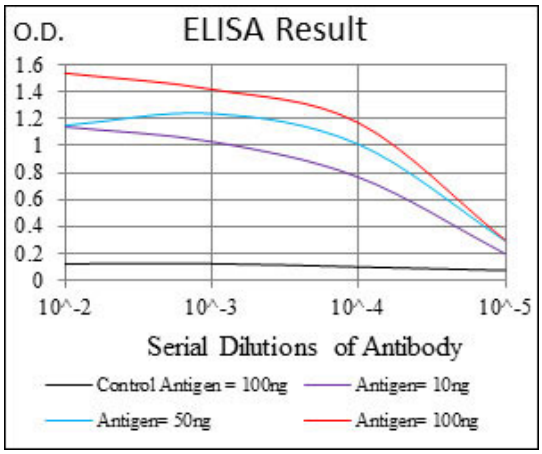
Single-pass type I membrane protein. Cell projection, ruffle membrane; Single-pass type I membrane protein. Recycling endosome. Melanosome. Cleavage furrow. Cell projection, lamellipodium. Cell junction, focal adhesion. Note=Highly enriched in stage I melanosomes. Located on plasma membrane of neuroblastoma NMB7 cells. In a lung cancer cell line, in prometaphase and metaphase, localizes diffusely at the membrane and in a few intracellular vesicles. In early telophase, detected mainly on the matrix-facing side of the cells. By mid-telophase, concentrated to the ingressing cleavage furrow, mainly to the basal side of the furrow. In late telophase, concentrated to the extending protrusions formed at the opposite ends of the spreading daughter cells, in vesicles at the base of the lamellipodia formed by the separating daughter cells Colocalizes with ITGB1BP1 and metastatic suppressor protein NME2 at the edge or peripheral ruffles and lamellipodia during the early stages of cell spreading on fibronectin or collagen. Translocates from peripheral focal adhesions sites to fibrillar adhesions in a ITGB1BP1-dependent manner. Enriched preferentially at invadopodia, cell membrane protrusions that correspond to sites of cell invasion, in a collagen- dependent manner. Localized at plasma and ruffle membranes in a collagen-independent manner. [Isoform 5]: Cell membrane, sarcolemma {ECO:0000250|UniProtKB:P09055}. Cell junction {ECO:0000250|UniProtKB:P09055}. Note=In cardiac muscle, found in costameres and intercalated disks. {ECO:0000250|UniProtKB:P09055}

Tissue Location
Expressed in vascular smooth muscle cells (at protein level). [Isoform 2]: Expressed in skin, liver, skeletal muscle, cardiac muscle, placenta, umbilical vein endothelial cells, neuroblastoma cells, lymphoma cells, hepatoma cells and astrocytoma cells. [Isoform 4]: Together with isoform 3, is expressed in muscle, kidney, liver, placenta, cervical epithelium, umbilical vein endothelial cells, fibroblast cells, embryonal kidney cells, platelets and several blood cell lines. Rather than isoform 3, is selectively expressed in peripheral T-cells.

ITGB1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture



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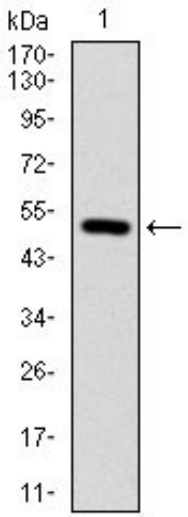


Figure 1: Western blot analysis using ITGB1 mAb against human ITGB1 (AA: 50-270) recombinant protein. (Expected MW is 50.6 kDa)

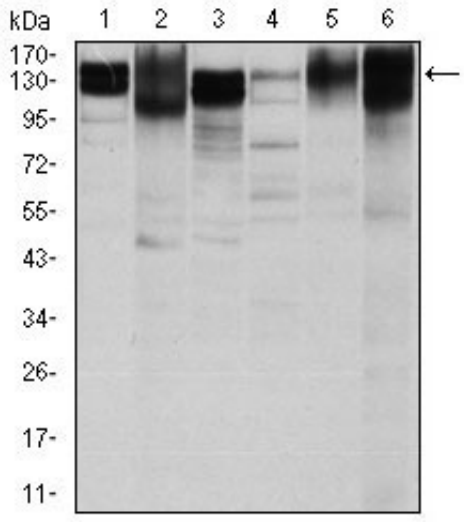


Figure 2: Western blot analysis using ITGB1 mouse mAb against Hela (1), HepG2 (2), A549 (3), Jurkat(4), L1210 (5) and Cos7 (6) cell lysate.

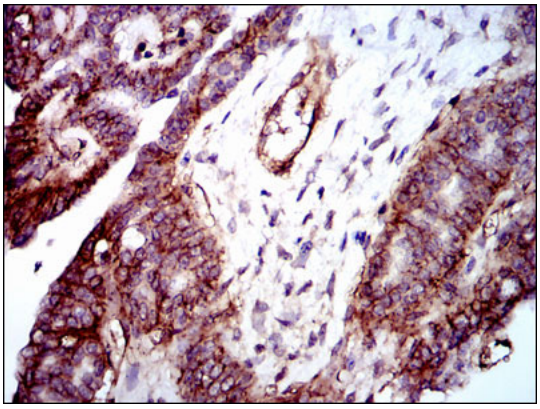


Figure 3: Immunohistochemical analysis of paraffin-embedded ovarian cancer tissues using ITGB1 mouse mAb with DAB staining.

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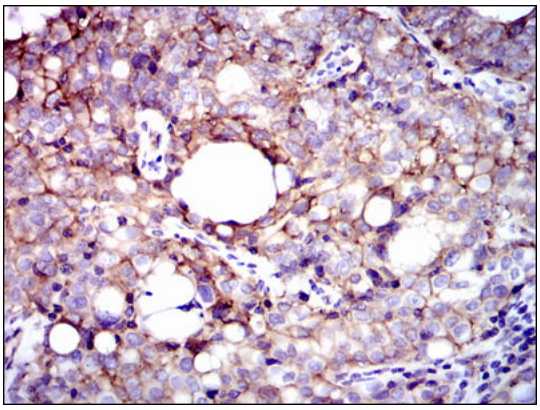


Figure 4: Immunohistochemical analysis of paraffin-embedded cervical cancer tissues using ITGB1 mouse mAb with DAB staining.

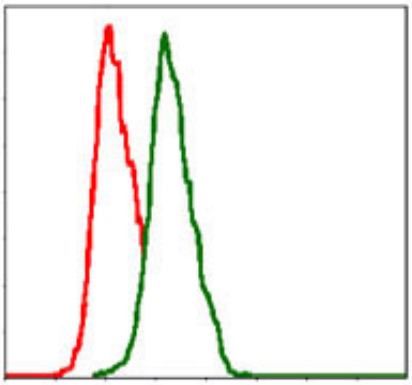


Figure 4: Flow cytometric analysis of Hela cells using ITGB1 mouse mAb (green) and negative control (red).

ITGB1 Antibody - References

Int J Oncol. 2009 Dec;35(6):1441-7 J Cell Physiol. 2010 Jan;222(1):156-67