

**KD-Validated Anti-Integrin  $\beta$ 1/CD29 Rabbit Monoclonal Antibody**  
**Rabbit monoclonal antibody**  
**Catalog # AGI2300****Specification****KD-Validated Anti-Integrin  $\beta$ 1/CD29 Rabbit Monoclonal Antibody - Product Information**

|                   |                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application       | WB, FC, ICC                                                                                                                                                                                                                                                                                                                                                                |
| Primary Accession | <a href="#">P05556</a>                                                                                                                                                                                                                                                                                                                                                     |
| Reactivity        | Human                                                                                                                                                                                                                                                                                                                                                                      |
| Clonality         | Monoclonal                                                                                                                                                                                                                                                                                                                                                                 |
| Isotype           | Rabbit IgG                                                                                                                                                                                                                                                                                                                                                                 |
| Calculated MW     | Predicted, 88 kDa , observed, 115/135 kDa                                                                                                                                                                                                                                                                                                                                  |
| Gene Name         | KDa                                                                                                                                                                                                                                                                                                                                                                        |
| Aliases           | ITGB1                                                                                                                                                                                                                                                                                                                                                                      |
|                   | GPIIA; MSK12; CD29; FNRB; MDF2;<br>Integrin, Beta 1 (Fibronectin Receptor,<br>Beta Polypeptide, Antigen CD29 Includes<br>MDF2, MSK12); Glycoprotein IIa; Integrin<br>Beta-1; Very Late Activation Protein, Beta<br>Polypeptide; Fibronectin Receptor Subunit<br>Beta; Integrin VLA-4 Beta Subunit; VLA-4<br>Subunit Beta; Integrin Beta 1; CD29<br>Antigen; VLA-BETA; VLAB |
| Immunogen         | A synthesized peptide derived from human<br>integrin beta-1/CD29                                                                                                                                                                                                                                                                                                           |

**KD-Validated Anti-Integrin  $\beta$ 1/CD29 Rabbit Monoclonal Antibody - Additional Information**

|                                                                                                                                                                                                                                                                                                                  |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Gene ID                                                                                                                                                                                                                                                                                                          | 3688 |
| Other Names                                                                                                                                                                                                                                                                                                      |      |
| Integrin beta-1, Fibronectin receptor subunit beta, Glycoprotein IIa, GPIIA, VLA-4 subunit beta, CD29, ITGB1 ( <a href="http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=6153">http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=6153</a> target="_blank">HGNC:6153</a>), FNRB, MDF2, MSK12 |      |

**KD-Validated Anti-Integrin  $\beta$ 1/CD29 Rabbit Monoclonal 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 laminin. 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:<a href="http://www.uniprot.org/citations/23125415" target="\_blank">23125415</a>, PubMed:<a href="http://www.uniprot.org/citations/24789099" target="\_blank">24789099</a>). 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:<a href="http://www.uniprot.org/citations/18635536" target="\_blank">18635536</a>, PubMed:<a href="http://www.uniprot.org/citations/25398877" target="\_blank">25398877</a>). ITGA5:ITGB1 acts as a receptor for fibrillin-1 (FBN1) and mediates R-G- D-dependent cell adhesion to FBN1 (PubMed:<a href="http://www.uniprot.org/citations/12807887" target="\_blank">12807887</a>, PubMed:<a href="http://www.uniprot.org/citations/17158881" target="\_blank">17158881</a>). ITGA5:ITGB1 acts as a receptor for fibronectin FN1 and mediates R-G-D- dependent cell adhesion to FN1 (PubMed:<a href="http://www.uniprot.org/citations/33962943" target="\_blank">33962943</a>). ITGA5:ITGB1 is a receptor for IL1B and binding is essential for IL1B signaling (PubMed:<a href="http://www.uniprot.org/citations/29030430" target="\_blank">29030430</a>). ITGA5:ITGB3 is a receptor for soluble CD40LG and is required for CD40/CD40LG signaling (PubMed:<a href="http://www.uniprot.org/citations/31331973" target="\_blank">31331973</a>). 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:<a href="http://www.uniprot.org/citations/35802072" target="\_blank">35802072</a>).

### 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

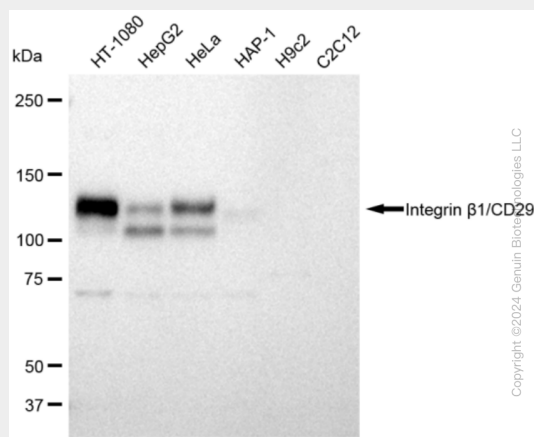
Expressed in vascular smooth muscle cells (at protein level). [Isoform 2]: Expressed in skin, liver, skeletal muscle, cardiac muscle, placenta, umbilical vein endothelial cells, neuroblastoma cells, lymphoma cells, hepatoma cells and astrocytoma cells. [Isoform 4]: Together with isoform 3, is expressed 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.

### KD-Validated Anti-Integrin $\beta$ 1/CD29 Rabbit Monoclonal Antibody - Protocols

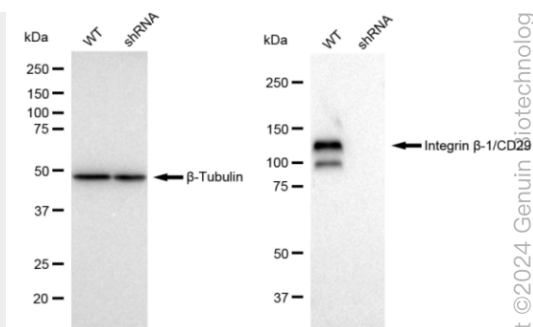
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

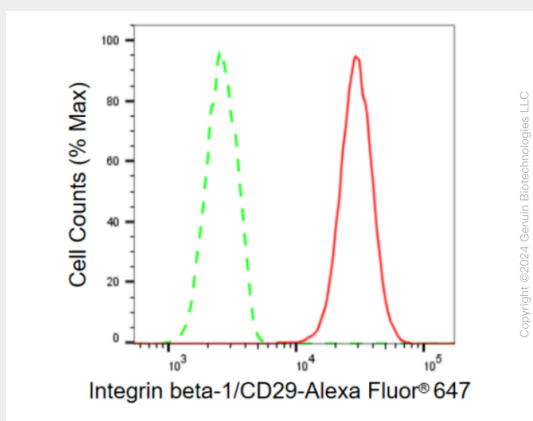
### KD-Validated Anti-Integrin $\beta$ 1/CD29 Rabbit Monoclonal Antibody - Images



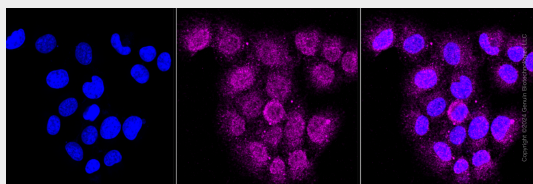
Western blotting analysis using anti-Integrin  $\beta$ 1/CD29 antibody (Cat#AGI2300). Total cell lysates (30  $\mu$ g) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Integrin  $\beta$ 1/CD29 antibody (Cat#AGI2300, 1:5,000) and HRP-conjugated goat anti rabbit secondary antibody respectively.



Western blotting analysis using anti-Integrin beta-1/CD29 antibody (Cat#AGI2300). Integrin beta-1/CD29 expression in wild type (WT) and Integrin beta-1/CD29 shRNA knockdown (KD) HeLa cells with 30  $\mu$ g of total cell lysates.  $\beta$ -Tubulin serves as a loading control. The blot was incubated with anti-Integrin beta-1/CD29 antibody (Cat#AGI2300, 1:5,000) and HRP-conjugated goat anti rabbit secondary antibody respectively.



Flow cytometric analysis of Integrin beta-1/CD29 expression in HT-1080 cells using Integrin beta-1/CD29 antibody (Cat#AGI2300, 1:2,000). Green, isotype control; red, Integrin beta-1/CD29.



Immunocytochemical staining of HT-1080 cells with Integrin beta-1/CD29 antibody (Cat#AGI2300, 1:1,000). Nuclei were stained blue with DAPI; Integrin beta-1/CD29 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20  $\mu$ m.