Integrin beta-1 Antibody

Cat. No. CG1251

Applications:	**WB, ELISA**
Detected MW:	**88 kDa**
Species & Reactivity:	**Human, Mouse, Rat**
Isotype:	**Rabbit IgG**

BACKGROUND

The integrins are a family of alpha/betab heterodimeric receptors that mediate dynamic linkages between extracellular adhesion molecules and the intracellular actin cytoskeleton. Integrins are expressed by all multicellular animals, but their diversity varies widely among species; for example, in mammals, 19 alpha and 8 beta subunit genes encode polypeptides that combine to form 25 different receptors. Both integrin subunits are type I transmembrane proteins with large extracellular and short cytoplasmic domains of 700-1100 and 30-50 residuesrespectively. Integrins are ubiquitously expressed and at physiological conditions, integrins are highly glycosylated and contain a Ca2+ or Mg2+ ion, which is essential for ligand binding. Integrin receptors are critical for cell attachment to the extracellular matrix (ECM) and this is mediated through integrin-fibronectin, -vitronectin, -collagen and -laminin interactions. Intracellularly, integrins form adhesion complexes with proteins including talin, vinculin, paxillin and alpha-actinin. They also regulate kinases, such as focal adhesion kinase and Src family kinases, to mediate attachment to the actin cytoskeleton. Integrins also have a significant role in cell signaling and can activate protein kinases involved in the regulation of cell growth, division, survival, differentiation, migration and apoptosis. The beta 1, beta 3, and beta 5 integrin intracellular domains are sufficient to initiate signal transduction pathways. Furthermore, alternative splicing can regulate the ability of beta integrin intracellular domains to participate in signal transduction. Glycoprotein II/IIIb (alphaIIbbeta3) is an integrin receptor found on the surface of platelets. It is involved in the cross-linking of platelets with fibrin, and so has a vital role in blood clot formation.[1]

The integrin beta-1 (CD29) molecules are associated with one of at least 12 different alpha subunits. integrin beta-1 molecules can form receptors for fibronectin, collagen, and laminin, VCAM1, cytotactin, osteopontin, epiligrin, thrombospondin, CSPG4, vitronectin and also the human T cell very late antigen (VLA) 1 heterodimers. The high-affinity fibronectin receptor is alpha5/beta1 (or VLA-5).[2]

Integrin beta-1 recognize the sequence R-G-D in a wide array of ligands. Isoform beta-1B interferes with isoform beta-1A resulting in a dominant negative effect on cell adhesion and migration. It is involved in promoting endothelial cell motility and angiogenesis. It also play important role in up-regulation of the activity of kinases such as PKC via binding to KRT1. Together with KRT1 and GNB2L1/RACK1, it serves as a platform for Src activation or inactivation. In addition, it plays a mechanistic adhesive role during telophase and is required for the successful completion of cytokinesis.[3] It has been reported that phosphorylation–dephosphorylation cycles for Y783 and S785 are required for movement of beta1A-integrins in and out of focal contacts.[4]

References:
1. Schwartz, M.A. & Ginsberg, M.H.: et al: Nature Cell Biol. 4:E65-E68, 2002
2. Jin, H. et al: Br. J. Cancer 90:561-5, 2004
3. Reverte, C.G. et al: J. Cell Biol. 174:491-7, 2006
4. Sakai, T. et al: Proc. Natl. Acad. Sci. USA 98:3808-13, 2001

TECHNICAL INFORMATION

Source:
Integrin beta-1 antibody is a rabbit antibody raised against a short peptide from C-terminal sequence of human integrin beta-1.

Specificity and Sensitivity:
This antibody detects endogenous integrin beta-1 proteins without cross-reactivity with other family members.

Storage Buffer:
Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:500-1:1000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d
ELISA	1:1000

**Optimal dilutions must be determined by end user.*

CELL APPLICATIONS, INC.

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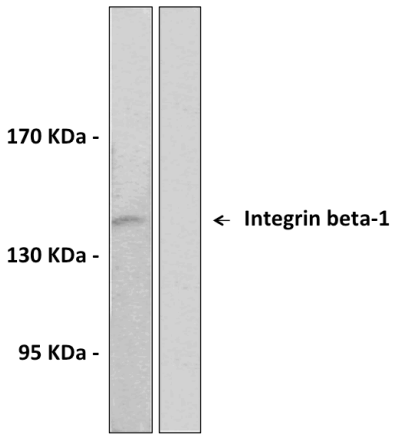
QUALITY CONTROL DATA



Immunoblotting analysis of extracts from Jurkat cells, using Anti-Integrin β1, C-Terminal antibody. The lane on the left was treated with the Anti-Integrin β1, C-Terminal antibody. The lane on the right (negative control) was treated with both Anti-Integrin β1, C-Terminal antibody and the synthesized immunogen peptide.