

β1-Integrin

Cat.No. 240 003; Polyclonal rabbit antibody, 50 μg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 μg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 μl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 IP: not tested yet ICC: not tested yet IHC: not tested yet IHC-P/FFPE: not tested yet
Immunogen	Synthetic peptide corresponding to AA 96 to 113 from mouse β1-Integrin (UniProt Id: P09055)
Reactivity	Reacts with: rat (P49134), mouse (P09055). Other species not tested yet.
Specificity	Specific for β1-integrin.
matching control	240-0P

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Integrins are heterodimers consisting of noncovalently associated α and β subunits. More than 20 different integrin receptors composed of 16 different α and 8 different β subunits have been described so far. Most of these receptors bind components of the extracellular matrix like fibronectin, collagen and vitronectin.

Integrins are transmembrane glycoproteins involved in many normal cellular processes (embryogenesis, hemostasis, tissue repair, immune response) but also in abnormal pathological events like metastatic spread of tumor cells. In humans five isoforms of **β1-integrin** have been described (β1A-1D, 1C-2). β1-integrin is also known as **very late antigen VLA** or CD29.

β3-integrin, also referred to a CD 61, is found with the alpha IIb chain in platelets.

Selected General References

Integrin expression profiling identifies integrin alpha5 and beta1 as prognostic factors in early stage non-small cell lung cancer. Dingemans AM, van den Boogaart V, Vosse BA, van Suylen RJ, Griffioen AW, Thijssen VL. *Molecular cancer* (2010) 9: 152.

Loss of beta1 integrin in mouse fibroblasts results in resistance to skin scleroderma in a mouse model. Liu S, Kapoor M, Denton CP, Abraham DJ, Leask A. *Arthritis and rheumatism* (2009) 60(9): 2817-21.

beta1 integrin maintains integrity of the embryonic neocortical stem cell niche. Loulier K, Lathia JD, Marthiens V, Relucio J, Mughal MR, Tang SC, Coksaygan T, Hall PE, Chigurupati S, Patton B, Colognato H, et al. *PLoS biology* (2009) 7(8): e1000176.

Caveolin-1-dependent beta1 integrin endocytosis is a critical regulator of fibronectin turnover. Shi F, Sottile J. *Journal of cell science* (2008) 121(Pt 14): 2360-71.

Secreted APP regulates the function of full-length APP in neurite outgrowth through interaction with integrin beta1. Young-Pearse TL, Chen AC, Chang R, Marquez C, Selkoe DJ. *Neural development* (2008) 3: 15.

Beta1 integrin activates Rac1 in Schwann cells to generate radial lamellae during axonal sorting and myelination. Nodari A, Zambroni D, Quattrini A, Court FA, D'Urso A, Recchia A, Tybulewicz VL, Wrabetz L, Feltri ML. *The Journal of cell biology* (2007) 177(6): 1063-75.

Beta1-integrin signaling mediates premyelinating oligodendrocyte survival but is not required for CNS myelination and remyelination.

Benninger Y, Colognato H, Thurnherr T, Franklin RJ, Leone DP, Atanasoski S, Nave KA, Ffrench-Constant C, Suter U, Relvas JB. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2006) 26(29): 7665-73.

OSP/claudin-11 forms a complex with a novel member of the tetraspanin super family and beta1 integrin and regulates proliferation and migration of oligodendrocytes. Tiwari-Woodruff SK, Buznikov AG, Vu TQ, Micevych PE, Chen K, Kornblum HI, Bronstein JM. *The Journal of cell biology* (2001) 153(2): 295-305.

Nerve growth factor stimulates the accumulation of beta1 integrin at the tips of filopodia in the growth cones of sympathetic neurons.

Grabham PW, Goldberg DJ. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (1997) 17(14): 5455-65.

Altered tyrosine phosphorylation via the very late antigen (VLA)/beta1 integrin stimulation is associated with impaired T-cell signaling through VLA-4 after allogeneic bone marrow transplantation. Sato T, Ohashi Y, Tachibana K, Soiffer RJ, Ritz J, Morimoto C. *Blood* (1997) 90(10): 4222-9.

Signal transduction through the beta1 integrin family surface adhesion molecules VLA-4 and VLA-5 of human B-cell precursors activates CD19 receptor-associated protein-tyrosine kinases. Xiao J, Messinger Y, Jin J, Myers DE, Bolen JB, Uckun FM. *The Journal of biological chemistry* (1996) 271(13): 7659-64.

Control of beta1 integrin function. Localization of stimulatory epitopes. Wilkins JA, Li A, Ni H, Stupack DG, Shen C. *The Journal of biological chemistry* (1996) 271(6): 3046-51.