SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

β3-Integrin

Cat.No. 240-3P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For **reconstitution** add 100 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Control peptides should be stored at -20°C when still lyophilized! For detailed information, see back of the data sheet.
Immunogen	Synthetic peptide corresponding to AA 76 to 91 from mouse β3-Integrin (UniProt Id: O54890)
Recommended dilution	Optimal concentrations should be determined by the end-user.
Matching antibodies	240 303
Remarks	This control peptide consists of the synthetic peptide (aa 76 - 91 of mouse β3-integrin) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

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

Background

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 **v**ery **l**ate **a**ntigen 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 et al. Mol. Cancer (2010) PubMed:20565758

Loss of beta1 integrin in mouse fibroblasts results in resistance to skin scleroderma in a mouse model.
Liu S et al. Arthritis Rheum. (2009) PubMed:19714619

beta1 integrin maintains integrity of the embryonic neocortical stem cell niche.
Loulier K et al. PLoS Biol. (2009) PubMed:19688041

Caveolin-1-dependent beta1 integrin endocytosis is a critical regulator of fibronectin turnover.
Shi F et al. J. Cell. Sci. (2008) PubMed:18577581

Secreted APP regulates the function of full-length APP in neurite outgrowth through interaction with integrin beta1.
Young-Pearse TL et al. Neural Dev (2008) PubMed:18573216

Beta1 integrin activates Rac1 in Schwann cells to generate radial lamellae during axonal sorting and myelination.
Nodari A et al. J. Cell Biol. (2007) PubMed:17576799

Beta1-integrin signaling mediates premyelinating oligodendrocyte survival but is not required for CNS myelination and remyelination.
Benninger Y et al. J. Neurosci. (2006) PubMed:16855094

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 et al. J. Cell Biol. (2001) PubMed:11309411

Nerve growth factor stimulates the accumulation of beta1 integrin at the tips of filopodia in the growth cones of sympathetic neurons.
Grabham PW et al. J. Neurosci. (1997) PubMed:9204928

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 et al. Blood (1997) PubMed:9354695

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 et al. J. Biol. Chem. (1996) PubMed:8631803

Control of beta1 integrin function. Localization of stimulatory epitopes.
Wilkins JA et al. J. Biol. Chem. (1996) PubMed:8621699

Access the online factsheet including applicable protocols at https://sysy.com/product/240-3P or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.