

# Integrin $\beta 1$ (MEM-101A): sc-51649

## BACKGROUND

Integrins are heterodimers composed of noncovalently associated transmembrane  $\alpha$  and  $\beta$  subunits. The 16  $\alpha$  and 8  $\beta$  subunits heterodimerize to produce more than 20 different receptors. Most Integrin receptors bind ligands that are components of the extracellular matrix, including Fibronectin, collagen and Vitronectin. Certain Integrins can also bind to soluble ligands such as Fibrinogen, or to counterreceptors on adjacent cells such as the intracellular adhesion molecules (ICAMs), leading to aggregation of cells. Ligands serve to cross-link or cluster Integrins by binding to adjacent Integrin receptors; both receptor clustering and ligand occupancy are necessary for the activation of Integrin-mediated responses. In addition to mediating cell adhesion and cytoskeletal organization, Integrins function as signaling receptors. Signals transduced by Integrins play a role in many biological processes, including cell growth, differentiation, migration and apoptosis.

## REFERENCES

1. Hynes, R.O. 1992. Integrins: versatility, modulation, and signaling in cell adhesion. *Cell* 69: 11-25.
2. Balzac, F., et al. 1993. Expression and functional analysis of a cytoplasmic domain variant of the  $\beta 1$  integrin subunit. *J. Cell Biol.* 121: 171-178.
3. Balzac, F., et al. 1994. Expression of  $\beta 1B$  integrin isoform in CHO cells results in a dominant negative effect on cell adhesion and motility. *J. Cell Biol.* 127: 557-565.
4. Zhidkova, N.I., et al. 1995. Novel isoform of  $\beta 1$  integrin expressed in skeletal and cardiac muscle. *Biochem. Biophys. Res. Commun.* 214: 279-285.
5. Miyamoto, S., et al. 1995. Synergistic roles for receptor occupancy and aggregation in integrin transmembrane function. *Science* 267: 883-885.
6. Clark, E.A. and Brugge, J.S. 1995. Integrins and signal transduction pathways: the road taken. *Science* 268: 233-239.
7. Sheppard, D. 1996. Epithelial integrins. *Bioessays* 18: 655-660.
8. Juliano, R. 1996. Cooperation between soluble factors and integrin-mediated cell anchorage in the control of cell growth and differentiation. *Bioessays* 18: 911-917.

## CHROMOSOMAL LOCATION

Genetic locus: ITGB1 (human) mapping to 10p11.22.

## SOURCE

Integrin  $\beta 1$  (MEM-101A) is a mouse monoclonal antibody raised against Burkitt's lymphoma cell line Raji of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Integrin  $\beta 1$  (MEM-101A) is available conjugated either phycoerythrin (sc-51649 PE, 100 tests in 2 ml) or fluorescein (sc-51649 FITC, 100 tests in 2 ml), for WB (RGB), IF, IHC(P) and FCM.

## APPLICATIONS

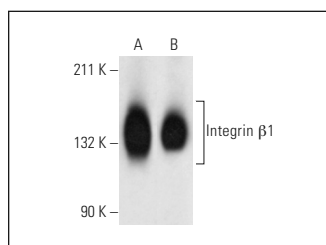
Integrin  $\beta 1$  (MEM-101A) is recommended for detection of Integrin  $\beta 1$  of human origin by Western Blotting (non-reducing) (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells).

Suitable for use as control antibody for Integrin  $\beta 1$  siRNA (h): sc-35674, Integrin  $\beta 1$  shRNA Plasmid (h): sc-35674-SH and Integrin  $\beta 1$  shRNA (h) Lentiviral Particles: sc-35674-V.

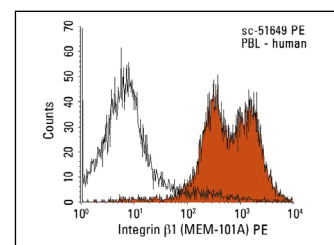
Molecular Weight of Integrin  $\beta 1$ : 138 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, HeLa whole cell lysate: sc-2200 or Raji whole cell lysate: sc-364236.

## DATA



Integrin  $\beta 1$  (MEM-101A): sc-51649. Western blot analysis of Integrin  $\beta 1$  expression in U-87 MG (A) and Raji (B) whole cell lysates under non-reducing conditions.



Integrin  $\beta 1$  (MEM-101A): sc-51649. Indirect FCM analysis of human peripheral blood leukocytes stained with Integrin  $\beta 1$  (MEM-101A), followed by PE-conjugated goat anti-mouse IgG<sub>1</sub>: sc-3764. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>: sc-3877.

## SELECT PRODUCT CITATIONS

1. Onodera, Y., et al. 2012. Rab5c promotes AMAP1-PRKD2 complex formation to enhance  $\beta 1$  integrin recycling in EGF-induced cancer invasion. *J. Cell Biol.* 197: 983-996.
2. Hao, S., et al. 2014. JAM-C promotes lymphangiogenesis and nodal metastasis in non-small cell lung cancer. *Tumour Biol.* 35: 5675-5687.
3. Haas, T.L., et al. 2017. Integrin  $\alpha 7$  is a functional marker and potential therapeutic target in glioblastoma. *Cell Stem Cell* 21: 35-50.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.