

# Integrin $\alpha 5$ (HMa5-1): sc-19668

## 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. Miyamoto, S., et al. 1995. Synergistic roles for receptor occupancy and aggregation in integrin transmembrane function. *Science* 267: 883-885.
3. Clark, E.A. and Brugge, J.S. 1995. Integrins and signal transduction pathways: the road taken. *Science* 268: 233-239.
4. Sheppard, D. 1996. Epithelial Integrins. *Bioessays* 18: 655-660.
5. Juliano, R. 1996. Cooperation between soluble factors and integrin-mediated cell anchorage in the control of cell growth and differentiation. *Bioessays* 18: 911-917.
6. Orecchia, A., et al. 2003. Vascular endothelial growth factor receptor-1 is deposited in the extracellular matrix by endothelial cells and is a ligand for the  $\alpha 5 \beta 1$  Integrin. *J. Cell Sci.* 116: 3479-3489.
7. Mould, A.P., et al. 2003. Role of ADMIDAS cation-binding site in ligand recognition by Integrin  $\alpha 5 \beta 1$ . *J. Biol. Chem.* 278: 51622-51629.

## CHROMOSOMAL LOCATION

Genetic locus: *Itga5* (mouse) mapping to 15 F3.

## SOURCE

Integrin  $\alpha 5$  (HMa5-1) is an Armenian hamster monoclonal antibody raised against affinity purified mouse Integrin  $\alpha 5$  protein.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for biological studies, sc-19668 L, 200  $\mu$ g/0.1 ml.

Integrin  $\alpha 5$  (HMa5-1) is available conjugated to either phycoerythrin (sc-19668 PE) or fluorescein (sc-19668 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

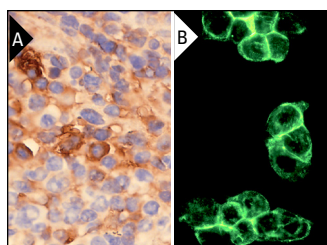
## APPLICATIONS

Integrin  $\alpha 5$  (HMa5-1) is recommended for detection of Integrin  $\alpha 5$  of mouse and rat origin by immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells).

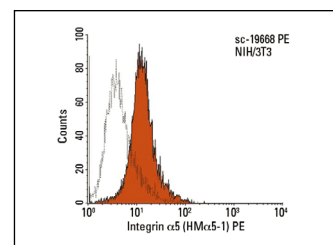
Suitable for use as control antibody for Integrin  $\alpha 5$  siRNA (m): sc-35687, Integrin  $\alpha 5$  shRNA Plasmid (m): sc-35687-SH and Integrin  $\alpha 5$  shRNA (m) Lentiviral Particles: sc-35687-V

Molecular Weight of Integrin  $\alpha 5$ : 150 kDa.

## DATA



Integrin  $\alpha 5$  (HMa5-1): sc-19668. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse lymphoma tissue showing membrane localization (A). Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane localization (B).



Integrin  $\alpha 5$  (HMa5-1) PE: sc-19668 PE. FCM analysis of NIH/3T3 cells. Black line histogram represents the isotype control, normal Armenian hamster IgG PE: sc-2875.

## SELECT PRODUCT CITATIONS

1. Zheng, C., et al. 2009. Semaphorin3F down-regulates the expression of integrin  $\alpha 5 \beta 3$  and sensitizes multicellular tumor spheroids to chemotherapy via the neuropilin-2 receptor *in vitro*. *Chemotherapy* 55: 344-352.
2. Brown, A.C., et al. 2011. Guiding epithelial cell phenotypes with engineered integrin-specific recombinant fibronectin fragments. *Tissue Eng. Part A* 17: 139-150.
3. Elloumi-Hannachi, I., et al. 2015. Contributions of the integrin  $\beta 1$  tail to cell adhesive forces. *Exp. Cell Res.* 332: 212-222.
4. Izumi, Y., et al. 2017. Integrin  $\alpha 5 \beta 1$  expression on dopaminergic neurons is involved in dopaminergic neurite outgrowth on striatal neurons. *Sci. Rep.* 7: 42111.

## 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.