

# Integrin $\alpha 3$ (VM-2): sc-32237

## 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. The Integrin  $\alpha 3$  chain, also known as very late (activation) antigen 3 (VLA-3), very common antigen 2 (VCA-2), extracellular matrix receptor 1 (ECMR1) and galactoprotein  $\beta 3$  (GAPB3), undergoes posttranslational cleavage in the extracellular domain to yield disulfide-linked light and heavy chains that join with  $\beta 1$  to form an Integrin that interacts with many extracellular-matrix proteins.

## REFERENCES

1. Tsuji, T., et al. 1991. Identification of human galactoprotein  $\beta 3$ , an oncogenic transformation-induced membrane glycoprotein, as VLA-3  $\alpha$  subunit: the primary structure of human Integrin  $\alpha 3$ . *J. Biochem.* 109: 659-665.
2. Hynes, R.O. 1992. Integrins: versatility, modulation, and signaling in cell adhesion. *Cell* 69: 11-25.
3. Berdichevsky, F., et al. 1994. Branching morphogenesis of human mammary epithelial cells in collagen gels. *J. Cell Sci.* 107: 3557-3568.
4. Miyamoto, S., et al. 1995. Synergistic roles for receptor occupancy and aggregation in Integrin transmembrane function. *Science* 267: 883-885.
5. Clark, E.A., et al. 1995. Integrins and signal transduction pathways: the road taken. *Science* 268: 233-239.
6. Sheppard, D. 1996. Epithelial integrins. *Bioessays* 18: 655-660.
7. Juliano, R. 1996. Cooperation between soluble factors and integrin-mediated cell anchorage in the control of cell growth and differentiation. *Bioessays* 18: 911-917.
8. de Melker, A.A., et al. 1997. The A and B variants of the Integrin  $\alpha 3$  subunit: tissue distribution and functional characterization. *Lab. Invest.* 76: 547-563.
9. Hirotsaki, T., et al. 2000. Structural requirement of carboxyl-terminal globular domains of Laminin  $\alpha 3$  chain for promotion of rapid cell adhesion and migration by Laminin-5. *J. Biol. Chem.* 275: 22495-22502.

## CHROMOSOMAL LOCATION

Genetic locus: ITGA3 (human) mapping to 17q21.33.

## RESEARCH USE

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

## SOURCE

Integrin  $\alpha 3$  (VM-2) is a mouse monoclonal antibody raised against human epidermal cells.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Integrin  $\alpha 3$  (VM-2) is available conjugated to either phycoerythrin (sc-32237 PE) or fluorescein (sc-32237 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

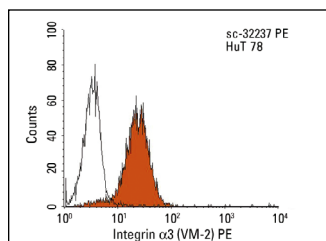
## APPLICATIONS

Integrin  $\alpha 3$  (VM-2) is recommended for detection of Integrin  $\alpha 3$  of human origin by flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells).

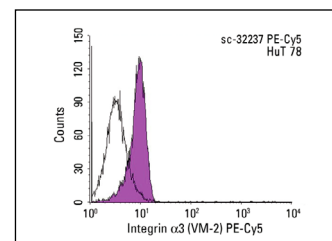
Suitable for use as control antibody for Integrin  $\alpha 3$  siRNA (h): sc-35684, Integrin  $\alpha 3$  shRNA Plasmid (h): sc-35684-SH and Integrin  $\alpha 3$  shRNA (h) Lentiviral Particles: sc-35684-V.

Molecular Weight of Integrin  $\alpha 3$ : 150 kDa.

## DATA



Integrin  $\alpha 3$  (VM-2) PE: sc-32237 PE. FCM analysis of HuT 78 cells. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>-PE: sc-2866.



Integrin  $\alpha 3$  (VM-2): sc-32237. Indirect FCM analysis of HuT 78 cells stained with Integrin  $\alpha 3$  (VM-2), followed by PE-Cy5-conjugated goat anti-mouse IgG F(ab')<sub>2</sub>: sc-3799. Black line histogram represents the isotype control, normal mouse IgG<sub>1</sub>: 3877.

## SELECT PRODUCT CITATIONS

1. Zuliani, T., et al. 2013. Fetal fibroblasts and keratinocytes with immunosuppressive properties for allogeneic cell-based wound therapy. *PLoS ONE* 8: e70408.
2. Hang, Q., et al. 2016. N-glycosylation of Integrin  $\alpha 5$  acts as a switch for EGFR-mediated complex formation of Integrin  $\alpha 5\beta 1$  to  $\alpha 6\beta 4$ . *Sci. Rep.* 6: 33507.
3. Yang, J., et al. 2019. EpCAM associates with integrin and regulates cell adhesion in cancer cells. *Biochem. Biophys. Res. Commun.* 522: 903-909.

## STORAGE

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