SANTA CRUZ BIOTECHNOLOGY, INC.

Integrin α9/β1 (Y9A2): sc-59969

BACKGROUND

Integrins are heterodimers composed of noncovalently associated transmembrane α and β subunits. The 16 α and 8 β 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. Tsuji, T., et al. 1991. Identification of human galactoprotein b3, an oncogenic transformation-induced membrane glycoprotein, as VLA-3 α subunit: the primary structure of human Integrin α3. J. Biochem. 109: 659-665.
2. Hynes, R.O. 1992. Integrins: versatility, modulation and signaling in cell adhesion. Cell 69: 11-25.
3. Miyamoto, S., et al. 1995. Synergistic roles for receptor occupancy and aggregation in integrin transmembrane function. Science 267: 883-885.
4. Clark, E.A. and Brugge, J.S. 1995. Integrins and signal transduction pathways: the road taken. Science 268: 233-239.
5. Sheppard, D. 1996. Epithelial integrins. Bioessays 18: 655-660.

CHROMOSOMAL LOCATION

Genetic locus: ITGA9 (human) mapping to 3p22.2, ITGB1 (human) mapping to 10p11.22.

SOURCE

Integrin α9/β1 (Y9A2) is a mouse monoclonal antibody raised against Integrin α9/β1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Integrin α9/β1 (Y9A2) is available conjugated to either phycoerythrin (sc-59969 PE) or fluorescein (sc-59969 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

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.

APPLICATIONS

Integrin α9/β1 (Y9A2) is recommended for detection of Integrin α9 and Integrin β1 of human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 cells).

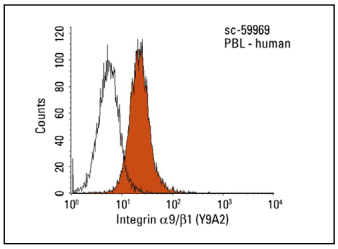
Molecular Weight of Integrin α9: 150 kDa.

Molecular Weight of Integrin β1: 130 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Integrin α9/β1 (Y9A2): sc-59969. Indirect FCM analysis of human peripheral blood leukocytes stained with Integrin α9/β1 (Y9A2), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG_1: sc-3877.

SELECT PRODUCT CITATIONS

1. Majumder, M., et al. 2012. Co-expression of α9β1 Integrin and VEGF-D confers lymphatic metastatic ability to a human breast cancer cell line MDA-MB-468LN. PLoS ONE 7: e35094.
2. Sato-Nishiuchi, R., et al. 2012. Polydom/SVEP1 is a ligand for Integrin α9β1. J. Biol. Chem. 287: 25615-25630.
3. Murai, R., et al. 2015. Affinity selection of peptide binders with magnetic beads via organic phase separation (MOPS). Biol. Pharm. Bull. 38: 1822-1826.
4. Mori, S., et al. 2015. Enhanced expression of integrin $\alpha_v\beta_3$ induced by TGF-β is required for the enhancing effect of fibroblast growth factor 1 (FGF1) in TGF-β-induced epithelial-mesenchymal transition (EMT) in mammary epithelial cells. PLoS ONE 10: e0137486.
5. Osumi, H., et al. 2020. Tumor cell-derived angiopoietin-like protein 2 establishes a preference for glycolytic metabolism in lung cancer cells. Cancer Sci. 111: 1241-1253.