SANTA CRUZ BIOTECHNOLOGY, INC.

Integrin α2/β1 (3H1472): sc-71430

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. Hynes, R.O. 1992. Integrins: versatility, modulation and signaling in cell adhesion. Cell 69: 11-25.
2. Miyamoto, S., Akiyama, S.K. and Yamada, K.M. 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. Hantgan, R.R., Lyles, D.S., Mallett, T.C., Rocco, M., Nagaswami, C. and Weisel, J.W. 2003. Ligand binding promotes the entropy-driven oligomerization of Integrin αIIb/β3. J. Biol. Chem. 278: 3417-3426.
7. Goncalves, I., Hughan, S.C., Schoenwaelder, S.M., Yap, C.L., Yuan, Y. and Jackson, S.P. 2003. Integrin αIIb/β3-dependent calcium signals regulate platelet-Fibrinogen interactions under flow. Involvement of phospholipase C γ2. J. Biol. Chem. 278: 34812-34822.
8. Maxwell, M.J., Yuan, Y., Anderson, K.E., Hibbs, M.L., Salem, H.H. and Jackson, S.P. 2004. SHIP-1 and Lyn kinase negatively regulate Integrin αIIb/β3 signaling in platelets. J. Biol. Chem. 279: 32196-32204.
9. Huang, C.L., Cheng, J.C., Liao, C.H., Stern, A., Hsieh, J.T., Wang, C.H., Hsu, H.L. and Tseng, C.P. 2004. Disabled-2 is a negative regulator of Integrin αIIb/β3-mediated Fibrinogen adhesion and cell signaling. J. Biol. Chem. 279: 42279-42289.

CHROMOSOMAL LOCATION

Genetic locus: ITGA2 (human) mapping to 5q11.2; ITGB1 (human) mapping to 10p11.22.

SOURCE

Integrin α2/β1 (3H1472) is a mouse monoclonal antibody raised against Integrin β1 from HT1080 fibrosarcoma cell extract of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Integrin α2/β1 (3H1472) is recommended for detection of Integrin α2 and Integrin β1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Molecular Weight of Integrin α2: 150 kDa.

Molecular Weight of Integrin β1: 130 kDa.
Positive Controls: HeLa whole cell lysate: sc-2200, SK-N-SH cell lysate: sc-2410 or HEL 92.1.7 cell lysate: sc-2270.

SELECT PRODUCT CITATIONS

1. Saemisch, M., Balcells, M., Riesinger, L., Nickmann, M., Bhaloo, S.I., Edelman, E.R. and Methe, H. 2019. Subendothelial matrix components influence endothelial cell apoptosis *in vitro*. Am. J. Physiol., Cell Physiol. 316: C210-C222.

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 for detailed protocols and support products.

CONJUGATES

See **Integrin β1 (A-4): sc-374429** for Integrin β1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.