SANTA CRUZ BIOTECHNOLOGY, INC.

p-β-catenin (1B11): sc-57533

BACKGROUND

The catenins, α, β and γ, are proteins that bind to the highly conserved, intracellular cytoplasmic tail of E-cadherin. Together, the catenin/cadherin complexes play critical roles in mediating cellular adhesion. β-catenin associates with the cytoplasmic portion of E-cadherin, which is necessary for the function of E-cadherin as an adhesion molecule. β-catenin also forms complexes with the tumor suppressor protein APC. Amino acid alterations at residues around Ser 33, one of the targets for phosphorylation of glycogen synthase kinase-3β, result in accumulation of the β-catenin protein in the cytoplasm and nucleus. Pin1 is a novel regulator of β-catenin signaling that directly binds a phosphorylated Ser-Pro motif next to the APC-binding site in β-catenin, inhibiting the interaction with APC and increasing β-catenin translocation into the nucleus. Thus, Pin1 overexpression may contribute to the upregulation of β-catenin in tumors such as breast cancer.

REFERENCES

1. Breen, E., et al. 1995. Role of the E-cadherin/α-catenin complex in modulating cell-cell and cell-matrix adhesive properties of invasive colon carcinoma cells. Ann. Surg. Oncol. 2: 378-385.
2. Perceall, W.E., et al. 1995. Frequent alterations in E-cadherin and α- and β-catenin expression in human breast cancer cell lines. Oncogene 11: 1319-1326.

CHROMOSOMAL LOCATION

Genetic locus: CTNNB1 (human) mapping to 3p22.1; Ctnnb1 (mouse) mapping to 9 F4.

SOURCE

p-β-catenin (1B11) is a mouse monoclonal antibody raised against a synthetic phosphopeptide of β-catenin of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

p-β-catenin (1B11) is recommended for detection of Tyr 654 phosphorylated β-catenin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for β-catenin siRNA (h): sc-29209, β-catenin siRNA (m): sc-29210, β-catenin shRNA Plasmid (h): sc-29209-SH, β-catenin shRNA Plasmid (m): sc-29210-SH, β-catenin shRNA (h) Lentiviral Particles: sc-29209-V and β-catenin shRNA (m) Lentiviral Particles: sc-29210-V.

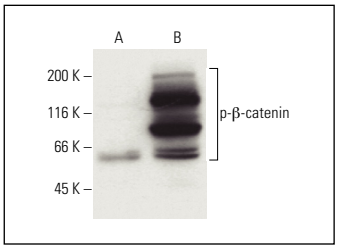
Molecular Weight of p-β-catenin: 92 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812 or pervanadate treated OVCAR-5 whole cell lysate.

STORAGE

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

DATA



p-β-catenin (1B11): sc-57533. Western blot analysis of β-catenin phosphorylation in untreated (**A**) and pervanadate treated (**B**) OVCAR-5 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cincinelli, R., et al. 2008. Synthesis, modeling, and RET protein kinase inhibitory activity of 3- and 4-substituted β-carbolin-1-ones. J. Med. Chem. 51: 7777-7787.
2. Cases, O., et al. 2013. Cubilin, a high affinity receptor for fibroblast growth factor 8, is required for cell survival in the developing vertebrate head. J. Biol. Chem. 288: 16655-16670.
3. Alao, J.P., et al. 2014. Selective inhibition of RET mediated cell proliferation *in vitro* by the kinase inhibitor SPP86. BMC Cancer 14: 853.
4. Mukherjee, N., et al. 2016. Frequent inactivation of MCC/CTNNBIP1 and overexpression of phospho-β-catenin^{Y654} are associated with breast carcinoma: clinical and prognostic significance. Biochim. Biophys. Acta 1862: 1472-1484.
5. Dianati, E., et al. 2017. From the cover: exposure to an environmentally relevant mixture of brominated flame retardants decreased p-β-cateninser675 expression and its interaction with E-cadherin in the mammary glands of lactating rats. Toxicol. Sci. 159: 114-123.
6. Chakraborty, C., et al. 2018. Activation of Wnt-β-catenin pathway in basal-parabasal layers of normal cervical epithelium comparable during development of uterine cervical carcinoma. Mol. Cell. Biochem. 443: 121-130.
7. Wong, H.L.X., et al. 2019. Early life stress disrupts intestinal homeostasis via NGF-TrkA signaling. Nat. Commun. 10: 1745.
8. Islam, M.S., et al. 2020. Reduction of nuclear Y654-p-β-catenin expression through SH3GL2-meditated downregulation of EGFR in chemotolerance TNBC: clinical and prognostic importance. J. Cell. Physiol. 235: 8114-8128.
9. Chakraborty, B., et al. 2021. Differential Wnt-β-catenin pathway activation in HPV positive and negative oral epithelium is transmitted during head and neck tumorigenesis: clinical implications. Med. Microbiol. Immunol. 210: 49-63.

RESEARCH USE

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