SANTA CRUZ BIOTECHNOLOGY, INC.

p-β-catenin (Thr 41/Ser 45): sc-101652

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. Knudsen, K.A., Soler, A.P., Johnson, K.R. and Wheelock, M.J. 1995. Interaction of α-actinin with the cadherin/catenin cell-cell adhesion complex via α-catenin. J. Cell Biol. 130: 67-77.
2. Breen, E., Steele, G., Jr. and Mercurio, A.M. 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.
3. Perceall, W.E., Woodard, A.S., Morrow, J.S., Rimm, D. and Fearon, E.R. 1995. Frequent alterations in E-cadherin and α- and β-catenin expression in human breast cancer cell lines. Oncogene 11: 1319-1326.
4. Ikeda, T., Yoshinaga, K., Semba, S., Kondo, E., Ohmori, H. and Horii, A. 2000. Mutational analysis of the CTNNB1 (β-catenin) gene in human endometrial cancer: frequent mutations at codon 34 that cause nuclear accumulation. Oncol. Rep. 7: 323-326.
5. Ryo, A., Nakamura, M., Wulf, G., Liou, Y.C. and Lu, K.P. 2001. Pin1 regulates turnover and subcellular localization of β-catenin by inhibiting its interaction with APC. Nat. Cell Biol. 3: 793-801.
6. Song, D.H., Dominguez, I., Mizuno, J., Kaut, M., Mohr, S.C. and Seldin, D.C. 2003. CK2 phosphorylation of the armadillo repeat region of β-catenin potentiates Wnt signaling. J. Biol. Chem. 278: 24018-24025.

CHROMOSOMAL LOCATION

Genetic locus: GORASP2 (human) mapping to 2q31.1-q31.2; Gorasp2 (mouse) mapping to 2 C2.

SOURCE

p-β-catenin (Thr 41/Ser 45) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Thr 41/Ser 45 of β-catenin of human origin.

STORAGE

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

PRODUCT

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

APPLICATIONS

p-β-catenin (Thr 41/Ser 45) is recommended for detection of Thr 41 and Ser 45 dually 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 (h2): sc-44252 and β-catenin siRNA (m): sc-29210.

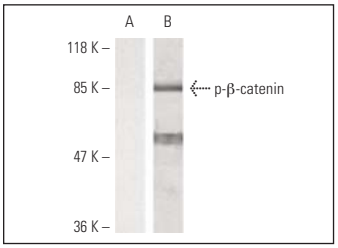
Molecular Weight of p-β-catenin: 92 kDa

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-β-catenin (Thr 41/Ser 45): sc-101652. Western blot analysis of phosphorylated β-catenin expression in untreated (**A**) and Calyculin A-treated (**B**) SW626 whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.