

# p-β-catenin (BC-22): sc-57535

## BACKGROUND

The catenins,  $\alpha$ ,  $\beta$  and  $\gamma$ , 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.  $\beta$ -catenin associates with the cytoplasmic portion of E-cadherin, which is necessary for the function of E-cadherin as an adhesion molecule.  $\beta$ -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-3 $\beta$ , results in accumulation of the  $\beta$ -catenin protein in the cytoplasm and nucleus. Pin1 is a novel regulator of  $\beta$ -catenin signaling that directly binds a phosphorylated Ser-Pro motif next to the APC-binding site in  $\beta$ -catenin, inhibiting the interaction with APC, and increasing  $\beta$ -catenin translocation into the nucleus. Thus, Pin1 overexpression may contribute to the upregulation of  $\beta$ -catenin in tumors such as breast cancer.

## REFERENCES

- Knudsen, K.A., et al. 1995. Interaction of  $\alpha$ -actinin with the cadherin/catenin cell-cell adhesion complex via  $\alpha$ -catenin. *J. Cell Biol.* 130: 67-77.
- Breen, E., et al. 1995. Role of the E-cadherin/ $\alpha$ -catenin complex in modulating cell-cell and cell-matrix adhesive properties of invasive colon carcinoma cells. *Ann. Surg. Oncol.* 2: 378-385.

## CHROMOSOMAL LOCATION

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

## SOURCE

p- $\beta$ -catenin (BC-22) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 32-45 of  $\beta$ -catenin of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p- $\beta$ -catenin (BC-22) is recommended for detection of Ser 33/Ser 37 phosphorylated  $\beta$ -catenin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for detection of the unphosphorylated or the Ser 33 phosphorylated protein or phosphorylated plakoglobin (despite the high homology in the phosphorylation site with  $\beta$ -catenin).

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

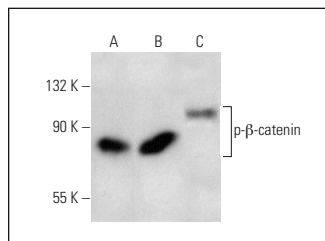
Molecular Weight of p- $\beta$ -catenin: 92 kDa.

Positive Controls:  $\beta$ -catenin (h): 293T Lysate: sc-116622, SH-SY5Y + calyculin whole cell lysate or SH-SY5Y cell lysate: sc-3812.

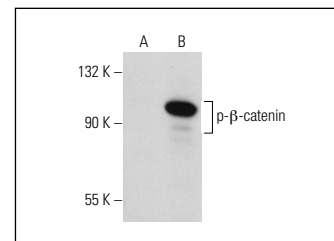
## STORAGE

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

## DATA



p- $\beta$ -catenin (BC-22): sc-57535. Western blot analysis of  $\beta$ -catenin phosphorylation in OVCAR-3 + pervanadate (A), SH-SY5Y + calyculin (B) and 293T + calyculin (C) whole cell lysates.



p- $\beta$ -catenin (BC-22): sc-57535. Western blot analysis of  $\beta$ -catenin phosphorylation in non-transfected: sc-117752 (A) and human  $\beta$ -catenin transfected: sc-116622 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Becker, S., et al. 2010. Overexpression of CD97 in intestinal epithelial cells of transgenic mice attenuates colitis by strengthening adherens junctions. *PLoS ONE* 5: e8507.
- Aytac, P.S., et al. 2016. Novel triazolothiadiazines act as potent anticancer agents in liver cancer cells through Akt and ASK-1 proteins. *Bioorg. Med. Chem.* 24: 858-872.
- Kumar, V., et al. 2017. Role of A-kinase anchor protein (AKAP4) in growth and survival of ovarian cancer cells. *Oncotarget* 8: 53124-53136.
- Shen, M., et al. 2018. Cell-specific functions of ADAM17 regulate the progression of thoracic aortic aneurysm. *Circ. Res.* 123: 372-388.
- Arboatti, A.S., et al. 2019. Diethylnitrosamine enhances hepatic tumorigenic pathways in mice fed with high fat diet (Hfd). *Chem. Biol. Interact.* 303: 70-78.
- Tang, J., et al. 2019. SOX2 mediates crosstalk between Sonic hedgehog and the Wnt/ $\beta$ -catenin signaling pathway to promote proliferation of pituitary adenoma cells. *Oncol. Lett.* 18: 81-86.
- Fostok, S., et al. 2019. Connexin 43 loss triggers cell cycle entry and invasion in non-neoplastic breast epithelium: a role for noncanonical Wnt signaling. *Cancers* 11: 339.
- Feng, Y., et al. 2020. Effect of hCMSCs and liraglutide combination in ALI through cAMP/PKAc/ $\beta$ -catenin signaling pathway. *Stem Cell Res. Ther.* 11: 2.
- Shen, P., et al. 2020. Long noncoding RNA lncARSR confers resistance to Adriamycin and promotes osteosarcoma progression. *Cell Death Dis.* 11: 362.

## RESEARCH USE

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