

# 14-3-3 $\beta$ (C-20): sc-628

## BACKGROUND

14-3-3 proteins regulate many cellular processes relevant to cancer biology, notably apoptosis, mitogenic signaling and cell-cycle checkpoints. Seven isoforms comprise this family of signaling intermediates, denoted 14-3-3  $\beta$ ,  $\gamma$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$ ,  $\theta$  and  $\sigma$ . 14-3-3 proteins form dimers that present two binding sites for ligand proteins, thereby bringing together two proteins that may not otherwise associate. These ligands largely share a 14-3-3 consensus binding motif and exhibit serine/threonine phosphorylation. 14-3-3 proteins function in broad regulation of these ligand proteins, by cytoplasmic sequestration, occupation of interaction domains and import/export sequences, prevention of degradation, activation/repression of enzymatic activity and facilitation of protein modification, and thus loss of expression contributes to a vast array of pathogenic cellular activities.

## SOURCE

14-3-3  $\beta$  (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of 14-3-3  $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-628 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as fluorescein (sc-628 FITC) or rhodamine (sc-628 TRITC) conjugate for immunofluorescence, 200  $\mu$ g/1 ml.

## APPLICATIONS

14-3-3  $\beta$  (C-20) is recommended for detection of 14-3-3  $\beta$  and, to a lesser extent, other 14-3-3 family members 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).

14-3-3  $\beta$  (C-20) is also recommended for detection of 14-3-3  $\beta$  and, to a lesser extent, other 14-3-3 family members in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of 14-3-3  $\beta$ : 30 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, K-562 whole cell lysate: sc-2203 or U-937 cell lysate: sc-2239.

## STORAGE

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

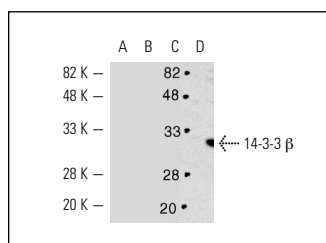
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

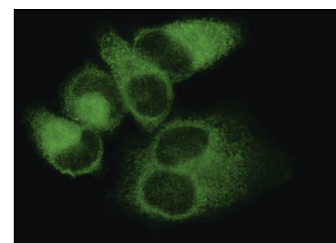
## RESEARCH USE

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

## DATA



14-3-3  $\beta$  (C-20): sc-628. Western blot analysis of 14-3-3  $\beta$  expression in A-431 (A), K-562 (B), U-937 (C) and NIH/3T3 (D) whole cell lysates.



14-3-3  $\beta$  (C-20): sc-628. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining.

## SELECT PRODUCT CITATIONS

1. Saiz, A. and Graus, F. 1997. Diagnosis of Creutzfeldt-Jakob disease by spinal fluid analysis. *Neurologia* 12: 31-32.
2. Deep, G., et al. 2006. Silymarin and silibinin cause G<sub>1</sub> and G<sub>2</sub>-M cell cycle arrest via distinct circuitries in human prostate cancer PC3 cells: a comparison of flavanone silibinin with flavanolignan mixture silymarin. *Oncogene* 25: 1053-1069.
3. Verbeke, P., et al. 2006. Recruitment of BAD by the *Chlamydia trachomatis* vacuole correlates with host-cell survival. *PLoS Pathog.* 2: e45.
4. Shirakashi, Y., et al. 2006.  $\alpha$ -Synuclein is colocalized with 14-3-3 and synphilin-1 in A53T transgenic mice. *Acta Neuropathol.* 112: 681-689.
5. Fan, T., et al. 2007. Up-regulation of 14-3-3 $\zeta$  in lung cancer and its implication as prognostic and therapeutic target. *Cancer Res.* 67: 7901-7906.
6. Neal, C.L., et al. 2009. 14-3-3 $\zeta$  overexpression defines high risk for breast cancer recurrence and promotes cancer cell survival. *Cancer Res.* 69: 3425-3432.
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8. Chen-Deutsch, X. and Studzinski, G.P. 2012. Dual role of hematopoietic progenitor kinase 1 (HPK1) as a positive regulator of 1 $\alpha$ ,25-dihydroxyvitamin D-induced differentiation and cell cycle arrest of AML cells and as a mediator of vitamin D resistance. *Cell Cycle* 11: 1364-1373.
9. Klingberg, R., et al. 2015. Analysis of phosphorylation-dependent protein-protein interactions of histone H3. *ACS Chem. Biol.* 10: 138-145.



Try **14-3-3  $\beta$  (A-6): sc-25276** or **14-3-3  $\beta$  (60C10): sc-59419**, our highly recommended monoclonal alternatives to 14-3-3  $\beta$  (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **14-3-3  $\beta$  (A-6): sc-25276**.