

# 14-3-3 $\theta$ (5J20): sc-69720

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: YWHAQ (human) mapping to 2p25.1; Ywhaq (mouse) mapping to 12 A1.3.

## SOURCE

14-3-3  $\theta$  (5J20) is a mouse monoclonal antibody raised against full length 14-3-3  $\theta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

14-3-3  $\theta$  (5J20) is recommended for detection of 14-3-3  $\theta$  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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with 14-3-3  $\omega$ .

14-3-3  $\theta$  (5J20) is also recommended for detection of 14-3-3  $\theta$  in additional species, including bovine.

Suitable for use as control antibody for 14-3-3  $\theta$  siRNA (h): sc-29586, 14-3-3  $\theta$  siRNA (m): sc-29587, 14-3-3  $\theta$  siRNA (r): sc-270533, 14-3-3  $\theta$  shRNA Plasmid (h): sc-29586-SH, 14-3-3  $\theta$  shRNA Plasmid (m): sc-29587-SH, 14-3-3  $\theta$  shRNA Plasmid (r): sc-270533-SH, 14-3-3  $\theta$  shRNA (h) Lentiviral Particles: sc-29586-V, 14-3-3  $\theta$  shRNA (m) Lentiviral Particles: sc-29587-V and 14-3-3  $\theta$  shRNA (r) Lentiviral Particles: sc-270533-V.

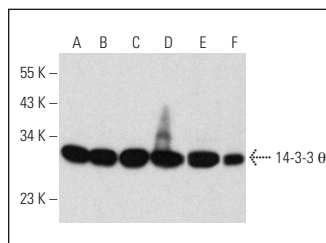
Molecular Weight of 14-3-3  $\theta$ : 30 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, 14-3-3  $\theta$  (h4): 293T Lysate: sc-127856 or HeLa whole cell lysate: sc-2200.

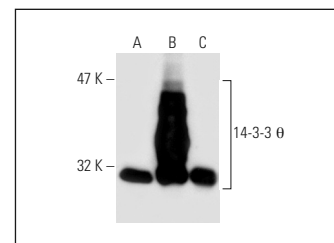
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



14-3-3  $\theta$  (5J20): sc-69720. Western blot analysis of 14-3-3  $\theta$  expression in NIH/3T3 (A), HeLa (B), A-431 (C), EOC 20 (D) and KNRK (E) whole cell lysates and mouse prostate tissue extract (F).



14-3-3  $\theta$  (5J20): sc-69720. Western blot analysis of 14-3-3  $\theta$  expression in non-transfected 293T: sc-117752 (A), human 14-3-3  $\theta$  transfected 293T: sc-127856 (B) and PC-12 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Park, Y.H., et al. 2016. Pyrin inflammasome activation and RhoA signaling in the autoinflammatory diseases FMF and HIDS. *Nat. Immunol.* 17: 914-921.
2. Wu, W., et al. 2019. SSRP1 promotes colorectal cancer progression and is negatively regulated by miR-28-5p. *J. Cell. Mol. Med.* 23: 3118-3129.
3. Abdrabou, A., et al. 2020. Differential subcellular distribution and translocation of seven 14-3-3 isoforms in response to EGF and during the cell cycle. *Int. J. Mol. Sci.* 21: 318.
4. Ercu, M., et al. 2020. Phosphodiesterase 3A and arterial hypertension. *Circulation* 142: 133-149.
5. Gómora-García, J.C., et al. 2021. IRE1 $\alpha$  RIDD activity induced under ER stress drives neuronal death by the degradation of 14-3-3  $\theta$  mRNA in cortical neurons during glucose deprivation. *Cell Death Discov.* 7: 131.
6. Shi, T., et al. 2021. p53 Forms redox-dependent protein-protein interactions through cysteine 277. *Antioxidants* 10: 1578.

## RESEARCH USE

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



See **pan 14-3-3 (B-8): sc-133233** for pan 14-3-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.