SANTA CRUZ BIOTECHNOLOGY, INC.

53BP1 (E-10): sc-515841

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The p53 binding proteins 53BP1 and 53BP2 (Bbp) bind to the central DNA-binding domain of wild type p53, but do not bind mutant p53. The central DNA-binding domain of p53 is required for site-specific DNA binding and is frequently mutated in malignant tumors. Binding of 53BP1 to the L3 loop of p53 and of 53BP2 to the L2 loop of p53 confirms that the loop is dependent on p53 conformation. Site-specific binding also suggests that 53BP1 and 53BP2 are involved in p53-mediated tumor suppression. 53BP1 was isolated from H258 cells and is expressed in Jurkat cells in both the cytoplasm and the nucleus. The N-terminus of 53BP2 is localized to the cytoplasm, while the C-terminus might be localized in the nucleus. 53BP1 promotes cell proliferation by binding to p202, whereas 53BP2 induces cell death by binding to Bcl2 and NFκB p65.

CHROMOSOMAL LOCATION

Genetic locus: TP53BP1 (human) mapping to 15q15.3; Trp53bp1 (mouse) mapping to 2 E5.

SOURCE

53BP1 (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1221-1239 within an internal region of 53BP1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

53BP1 (E-10) is available conjugated to agarose (sc-515841 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515841 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515841 PE), fluorescein (sc-515841 FITC), Alexa Fluor® 488 (sc-515841 AF488), Alexa Fluor® 546 (sc-515841 AF546), Alexa Fluor® 594 (sc-515841 AF594) or Alexa Fluor® 647 (sc-515841 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515841 AF680) or Alexa Fluor® 790 (sc-515841 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

53BP1 (E-10) is recommended for detection of 53BP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 53BP1 siRNA (h): sc-37455, 53BP1 siRNA (m): sc-37456, 53BP1 shRNA Plasmid (h): sc-37455-SH, 53BP1 shRNA Plasmid (m): sc-37456-SH, 53BP1 shRNA (h) Lentiviral Particles: sc-37455-V and 53BP1 shRNA (m) Lentiviral Particles: sc-37456-V.

Molecular Weight (predicted) of 53BP1: 214 kDa.

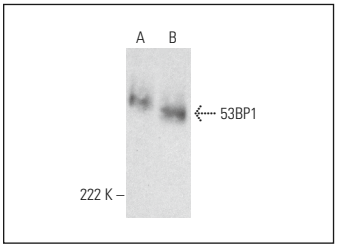
Molecular Weight (observed) of 53BP1: 245-460 kDa.

Positive Controls: Ramos cell lysate: sc-2216 or Sol8 cell lysate: sc-2249.

STORAGE

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

DATA



53BP1 (E-10): sc-515841. Western blot analysis of 53BP1 expression in Ramos (**A**) and Sol8 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. von Morgen, P., et al. 2018. Nuclear localisation of 53BP1 is regulated by phosphorylation of the nuclear localisation signal. Biol. Cell 110: 137-146.
2. Deplanche, M., et al. 2019. *Staphylococcus aureus* induces DNA damage in host cell. Sci. Rep. 9: 7694.
3. Tang, M., et al. 2020. FOXK1 participates in DNA damage response by controlling 53BP1 function. Cell Rep. 32: 108018.
4. Long, K., et al. 2021. Small-molecule inhibition of APE1 induces apoptosis, pyroptosis, and necroptosis in non-small cell lung cancer. Cell Death Dis. 12: 503.
5. Iwai, K., et al. 2021. A CDC7 inhibitor sensitizes DNA-damaging chemotherapies by suppressing homologous recombination repair to delay DNA damage recovery. Sci. Adv. 7: eabf0197.
6. Shastri, V.M., et al. 2021. A novel cell-cycle-regulated interaction of the Bloom syndrome helicase BLM with Mcm6 controls replication-linked processes. Nucleic Acids Res. 49: 8699-8713.
7. El-Saadi, M.W., et al. 2022. Tracing brain genotoxic stress in Parkinson's disease with a novel single-cell genetic sensor. Sci. Adv. 8: eabd1700.
8. Jeong, A., et al. 2022. PRMT7 inhibitor SGC8158 enhances doxorubicin-induced DNA damage and its cytotoxicity. Int. J. Mol. Sci. 23: 12323.
9. Matthäus, T., et al. 2023. Arsenite impairs BRCA1-dependent DNA double-strand break repair, a mechanism potentially contributing to genomic instability. Int. J. Mol. Sci. 24: 14395.
10. Viera, T., et al. 2024. Molecular basis of XRN2-deficient cancer cell sensitivity to poly(ADP-ribose) polymerase inhibition. Cancers 16: 595.

RESEARCH USE

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