

# p-53BP1 (38.Ser 25): sc-135748

## BACKGROUND

53BP1, also known as TP53BP1 (tumor protein p53 binding protein 1) or p202, is a 1,972 amino acid protein that is associated with kinetochores and contains 2 BRCT domains. Existing as multiple alternatively spliced isoforms, 53BP1 interacts with p53 and is thought to play a role in checkpoint signaling during mitosis, possibly enhancing p53-mediated transcriptional activation and influencing the cellular response to DNA damage. 53BP1 is subject to post-translational phosphorylation on specific amino acid residues, including Ser 1778, Ser 25 and Ser 29. The gene encoding 53BP1 maps to human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome.

## REFERENCES

- Iwabuchi, K., et al. 1998. Stimulation of p53-mediated transcriptional activation by the p53-binding proteins, 53BP1 and 53BP2. *J. Biol. Chem.* 273: 26061-26068.
- DiTullio, R.A., et al. 2002. 53BP1 functions in an ATM-dependent checkpoint pathway that is constitutively activated in human cancer. *Nat. Cell Biol.* 4: 998-1002.
- Wang, B., et al. 2002. 53BP1, a mediator of the DNA damage checkpoint. *Science* 298: 1435-1438.
- Manis, J.P., et al. 2004. 53BP1 links DNA damage-response pathways to immunoglobulin heavy chain class-switch recombination. *Nat. Immunol.* 5: 481-487.
- Dimitrova, N., et al. 2008. 53BP1 promotes non-homologous end joining of telomeres by increasing chromatin mobility. *Nature* 456: 524-528.
- Difilippantonio, S., et al. 2008. 53BP1 facilitates long-range DNA end-joining during V(D)J recombination. *Nature* 456: 529-533.
- Kang, Y., et al. 2009. Protein phosphatase 5 regulates the function of 53BP1 after neocarzinostatin-induced DNA damage. *J. Biol. Chem.* 284: 9845-9853.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-53BP1 (38.Ser 25) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 25 phosphorylated 53BP1 of mouse origin.

## PRODUCT

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

p-53BP1 (38.Ser 25) is available conjugated to agarose (sc-135748 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-135748 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

## APPLICATIONS

p-53BP1 (38.Ser 25) is recommended for detection of Ser 25 phosphorylated 53BP1 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] 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 p-53BP1: 214 kDa.

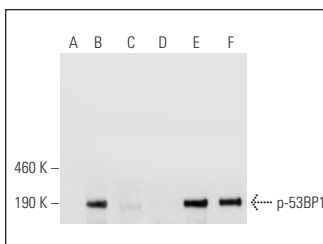
Molecular Weight (observed) of p-53BP1: 245-460 kDa.

Positive Controls: HeLa + UV irradiated cell lysate: sc-2221 or IMR-32 cell lysate: sc-2409.

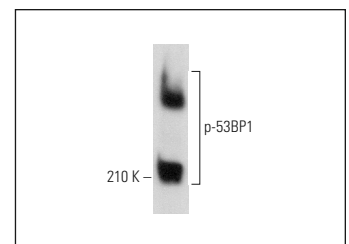
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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



Western blot analysis of 53BP1 phosphorylation in untreated (A,D), UV treated (B,E) and UV and lambda protein phosphatase (sc-200312A) treated (C,F) HeLa whole cell lysates. Antibodies tested include p-53BP1 (38.Ser 25): sc-135748 (A,B,C) and 53BP1 (H-300): sc-22760 (D,E,F).



p-53BP1 (38.Ser 25): sc-135748. Western blot analysis of 53BP1 phosphorylation in IMR-32 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Merle, P., et al. 2015. Highly efficient radiosensitization of human glioblastoma and lung cancer cells by a G-quadruplex DNA binding compound. *Sci. Rep.* 5: 16255.

## STORAGE

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

## RESEARCH USE

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