

# p53R2 (A-5): sc-137174

## BACKGROUND

The p53 gene is a highly characterized tumor suppressor that is often inactivated in various human cancers. p53 is a transcription factor that mediates cell cycle arrest and apoptosis by binding to DNA and activating the transcription of specific genes. p53 is also thought to be involved in DNA repair by the transcriptional activation of a ribonucleotide reductase gene, p53R2, after exposure to genotoxic stresses. p53R2 displays a significant similarity to ribonucleotide reductase small subunit (R2), and the expression of R2 is elevated at the onset of the S-phase of the cell cycle. However, only p53R2 expression is induced in response to ultraviolet and  $\gamma$ -irradiation and adriamycin treatment. p53R2 translocates to the nucleus upon DNA damage, and subsequently, supplies an immediate pool of dNTPs necessary for DNA repair.

## REFERENCES

1. Bjorklund, S., et al. 1990. S-phase-specific expression of mammalian ribonucleotide reductase R1 and R2 subunit mRNAs. *Biochemistry* 29: 5452-5458.
2. el-Deiry, W.S., et al. 1992. Definition of a consensus binding site for p53. *Nat. Genet.* 1: 45-49.
3. Greenblatt, M.S., et al. 1994. Mutations in the p53 tumor suppressor gene: clues to cancer etiology and molecular pathogenesis. *Cancer Res.* 54: 4855-4878.
4. Levine, A.J. 1997. p53, the cellular gatekeeper for growth and division. *Cell* 88: 323-331.
5. Tanaka, H., et al. 2000. A ribonucleotide reductase gene involved in a p53-dependent cell-cycle checkpoint for DNA damage. *Nature* 404: 42-49.
6. Chabes, A., et al. 2000. Controlled protein degradation regulates ribonucleotide reductase activity in proliferating mammalian cells during the normal cell cycle and in response to DNA damage and replication blocks. *J. Biol. Chem.* 275: 17747-17753.

## CHROMOSOMAL LOCATION

Genetic locus: RRM2B (human) mapping to 8q22.3; Rrm2b (mouse) mapping to 15 B3.1.

## SOURCE

p53R2 (A-5) is a mouse monoclonal antibody raised against amino acids 52-351 mapping at the C-terminus of p53R2 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

p53R2 (A-5) is recommended for detection of p53R2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for p53R2 siRNA (h): sc-36158, p53R2 siRNA (m): sc-37639, p53R2 shRNA Plasmid (h): sc-36158-SH, p53R2 shRNA Plasmid (m): sc-37639-SH, p53R2 shRNA (h) Lentiviral Particles: sc-36158-V and p53R2 shRNA (m) Lentiviral Particles: sc-37639-V.

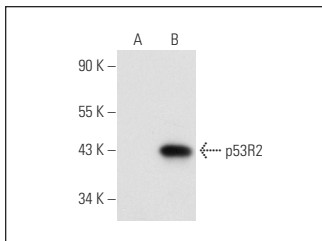
Molecular Weight of p53R2: 45 kDa.

Positive Controls: SW480 cell lysate: sc-2219, MCF7 whole cell lysate: sc-2206 or p53R2 (h): 293T Lysate: sc-111702.

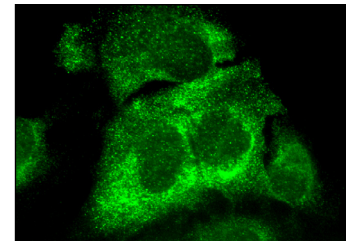
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA



p53R2 (A-5): sc-137174. Western blot analysis of p53R2 expression in non-transfected: sc-117752 (A) and human p53R2 transfected: sc-111702 (B) 293T whole cell lysates.



p53R2 (A-5): sc-137174. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and nuclear localization.

## SELECT PRODUCT CITATIONS

1. Yan, T., et al. 2017. Astaxanthin inhibits gemcitabine-resistant human pancreatic cancer progression through EMT inhibition and gemcitabine resensitization. *Oncol. Lett.* 14: 5400-5408.
2. Chang, C.C., et al. 2018. miR-211 regulates the expression of RRM2 in tumoral metastasis and recurrence in colorectal cancer patients with a k-ras gene mutation. *Oncol. Lett.* 15: 8107-8117.

## RESEARCH USE

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