

R2 (SS-22): sc-81850

BACKGROUND

Ribonucleotide reductase is essential for the production and maintenance of the level of deoxyribonucleoside triphosphates (dNTPs) required for DNA synthesis. It is an enzymatic complex consisting of two nonidentical subunits, R1 and R2, which are inactive separately. R2, the smaller subunit, is localized to the cytoplasm. R2 is the limiting factor of the catalytic activity of the ribonucleotide reductase enzymatic complex. R2 expression is strictly correlated to the S-phase of the cell cycle, whereas R1 remains constant throughout all phases of the cell cycle. While R2 seems to be involved solely in the maintenance of dNTPs for DNA replication, a similar protein, p53R2, has been shown to be responsible for the production of dNTPs in response to DNA damage.

CHROMOSOMAL LOCATION

Genetic locus: RRM2 (human) mapping to 2p25.1; Rrm2 (mouse) mapping to 12 A1.3.

SOURCE

R2 (SS-22) is a mouse monoclonal antibody raised against recombinant R2 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

R2 (SS-22) is recommended for detection of R2 of mouse, rat 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)], 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for R2 siRNA (h): sc-36338, R2 siRNA (m): sc-36339, R2 shRNA Plasmid (h): sc-36338-SH, R2 shRNA Plasmid (m): sc-36339-SH, R2 shRNA (h) Lentiviral Particles: sc-36338-V and R2 shRNA (m) Lentiviral Particles: sc-36339-V.

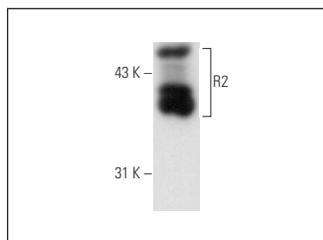
Molecular Weight of R2: 45 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

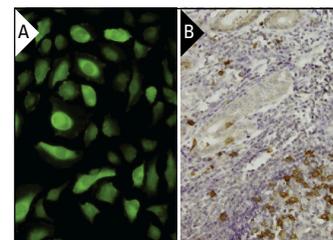
RECOMMENDED SUPPORT REAGENTS

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, 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



R2 (SS-22): sc-81850. Western blot analysis of R2 expression in A-431 whole cell lysate.



R2 (SS-22): sc-81850. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human stomach tissue showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Zhang, K., et al. 2009. Overexpression of RRM2 decreases thrombospondin-1 and increases VEGF production in human cancer cells *in vitro* and *in vivo*: implication of RRM2 in angiogenesis. *Mol. Cancer* 8: 11.
- Putluri, N., et al. 2014. Pathway-centric integrative analysis identifies RRM2 as a prognostic marker in breast cancer associated with poor survival and tamoxifen resistance. *Neoplasia* 16: 390-402.
- 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.
- Liu, X., et al. 2019. Silencing RRM2 inhibits multiple myeloma by targeting the Wnt/β-catenin signaling pathway. *Mol. Med. Rep.* 20: 2159-2166.
- Mazzu, Y.Z., et al. 2019. Methylation-associated miR-193b silencing activates master drivers of aggressive prostate cancer. *Mol. Oncol.* 13: 1944-1958.

RESEARCH USE

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



See **R2/p53R2 (F-9): sc-376973** for R2/p53R2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.