

# R1 (A-10): sc-377415

## BACKGROUND

Ribonucleotide reductase is essential for the production and maintenance of the level of deoxyribonucleoside triphosphates (dNTP's) required for DNA synthesis. It is an enzymatic complex consisting of two nonidentical subunits, R1 and R2, which are inactive separately. R1, the larger subunit, contains allosteric regulatory sites in a human breast carcinoma cell line. 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. Ribonucleotide reductase appears to be specifically involved in nucleotide excision repair, since both the R1 and R2 subunits are induced in response to UV light in a dose-dependent manner.

## CHROMOSOMAL LOCATION

Genetic locus: RRM1 (human) mapping to 11p15.4; Rrm1 (mouse) mapping to 7 E3.

## SOURCE

R1 (A-10) is a mouse monoclonal antibody raised against amino acids 1-300 of R1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

R1 (A-10) is available conjugated to agarose (sc-377415 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377415 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377415 PE), fluorescein (sc-377415 FITC), Alexa Fluor® 488 (sc-377415 AF488), Alexa Fluor® 546 (sc-377415 AF546), Alexa Fluor® 594 (sc-377415 AF594) or Alexa Fluor® 647 (sc-377415 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377415 AF680) or Alexa Fluor® 790 (sc-377415 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

R1 (A-10) is recommended for detection of R1 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), 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).

R1 (A-10) is also recommended for detection of R1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for R1 siRNA (h): sc-37640, R1 siRNA (m): sc-37641, R1 shRNA Plasmid (h): sc-37640-SH, R1 shRNA Plasmid (m): sc-37641-SH, R1 shRNA (h) Lentiviral Particles: sc-37640-V and R1 shRNA (m) Lentiviral Particles: sc-37641-V.

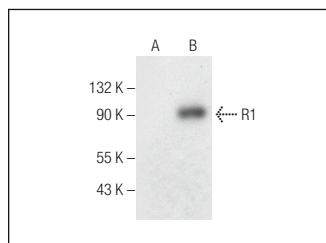
Molecular Weight of R1: 94 kDa.

Positive Controls: R1 (h3): 293T Lysate: sc-158910, A549 cell lysate: sc-2413 or Ramos cell lysate: sc-2216.

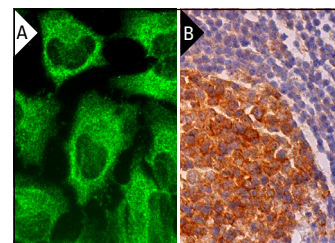
## RECOMMENDED SUPPORT REAGENTS

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



R1 (A-10): sc-377415. Western blot analysis of R1 expression in non-transfected: sc-117752 (A) and human R1 transfected: sc-158910 (B) 293T whole cell lysates.



R1 (A-10): sc-377415. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic and membrane staining of cells in germinal center (B).

## SELECT PRODUCT CITATIONS

- Alhajjala, H.S., et al. 2018. Irradiation of pediatric glioblastoma cells promotes radioresistance and enhances glioma malignancy via genome-wide transcriptome changes. *Oncotarget* 9: 34122-34131.
- Gu, X., et al. 2021. Decitabine- and 5-azacytidine resistance emerges from adaptive responses of the pyrimidine metabolism network. *Leukemia* 35: 1023-1036.
- Tian, L., et al. 2021. mTORC2 regulates ribonucleotide reductase to promote DNA replication and gemcitabine resistance in non-small cell lung cancer. *Neoplasia* 23: 643-652.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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