

R1 (Y-16): sc-11731

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 and has a predicted molecular weight of 90 kDa 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.

REFERENCES

1. Bjorklund, S., et al. 1990. S-phase-specific expression of mammalian ribonucleotide reductase R1 and R2 subunit mRNAs. *Biochem.* 29: 5452-5458.
2. Pavloff, N., et al. 1992. Sequence analysis of the large and small subunits of human ribonucleotide reductase. *DNA Seq.* 2: 227-234.

CHROMOSOMAL LOCATION

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

SOURCE

R1 (Y-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of R1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11731 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

R1 (Y-16) is recommended for detection of R1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

R1 (Y-16) is also recommended for detection of R1 in additional species, including equine, canine, bovine, porcine and avian.

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.

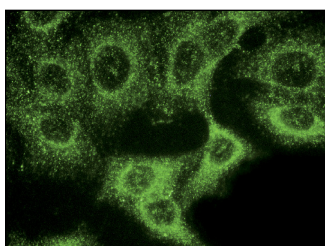
Molecular Weight of R1: 94 kDa.

Positive Controls: A549 cell lysate: sc-2413, human breast carcinoma or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



R1 (Y-16): sc-11731. Immunofluorescence staining of methanol-fixed A549 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Angus, S.P., et al. 2002. Retinoblastoma tumor suppressor targets dNTP metabolism to regulate DNA replication. *J. Biol. Chem.* 277: 44376-44384.
2. Niida, H., et al. 2010. Essential role of Tip60-dependent recruitment of ribonucleotide reductase at DNA damage sites in DNA repair during G₁ phase. *Genes Dev.* 24: 333-338.

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 or our catalog for detailed protocols and support products.


 MONOS
Satisfaction
Guaranteed

Try **R1 (A-10): sc-377415** or **R1 (E-7): sc-377426**, our highly recommended monoclonal alternatives to R1 (Y-16).