SANTA CRUZ BIOTECHNOLOGY, INC.

R1 (E-7): sc-377426

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

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. Elledge, S.J., et al. 1992. Ribonucleotide reductase: regulation, regulation, regulation. Trends Biochem. Sci. 17: 119-123.

CHROMOSOMAL LOCATION

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

SOURCE

R1 (E-7) is a mouse monoclonal antibody raised against amino acids 1-300 of R1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

R1 (E-7) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

R1 (E-7) 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.

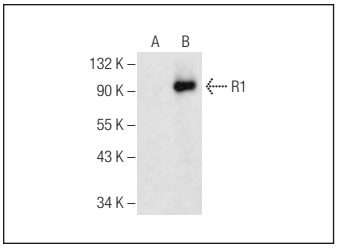
Molecular Weight of R1: 94 kDa.

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

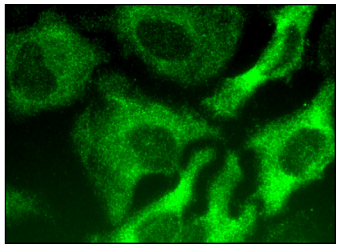
RECOMMENDED SUPPORT REAGENTS

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.

DATA



R1 (E-7): sc-377426. Western blot analysis of R1 expression in non-transfected: sc-117752 (**A**) and human R1 transfected: sc-158910 (**B**) 293T whole cell lysates.



R1 (E-7): sc-377426. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Saxena, S., et al. 2018. XRCC2 regulates replication fork progression during dNTP alterations. Cell Rep. 25: 3273-3282.e6.
2. Jin, J., et al. 2019. Exosome secreted from adipose-derived stem cells attenuates diabetic nephropathy by promoting autophagy flux and inhibiting apoptosis in podocyte. Stem Cell Res. Ther. 10: 95.

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 for detailed protocols and support products.