



R1 (h3): 293T Lysate: sc-158910

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. Pavloff, N., et al. 1992. Sequence analysis of the large and small subunits of human ribonucleotide reductase. *DNA Seq.* 2: 227-234.
3. Elledge, S.J., et al. 1992. Ribonucleotide reductase: regulation, regulation. *Trends Biochem. Sci.* 17: 119-123.
4. Filatov, D., et al. 1996. Induction of the mouse ribonucleotide reductase R1 and R2 genes in response to DNA damage by UV light. *J. Biol. Chem.* 271: 23698-23704.
5. Johansson, E., et al. 1998. Two YY-1-binding proximal elements regulate the promoter strength of the TATA-less mouse ribonucleotide reductase R1 gene. *J. Biol. Chem.* 273: 29816-29821.
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.
7. Tanaka, H., et al. 2000. A ribonucleotide reductase gene involved in a p53-dependent cell-cycle checkpoint for DNA damage. *Nature* 404: 42-49.

CHROMOSOMAL LOCATION

Genetic locus: RRM1 (human) mapping to 11p15.4.

PRODUCT

R1 (h3): 293T Lysate represents a lysate of human R1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

R1 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive R1 antibodies. Recommended use: 10-20 µl per lane.

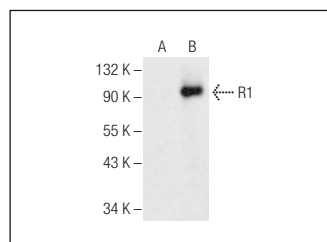
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

R1 (E-7): sc-377426 is recommended as a positive control antibody for Western Blot analysis of enhanced human R1 expression in R1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

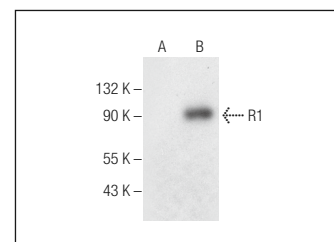
RECOMMENDED SUPPORT REAGENTS

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.

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 (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.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.