

## R2/p53R2 (H-300): sc-22785

### 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.

### 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. 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.

### CHROMOSOMAL LOCATION

Genetic locus: RRM2 (human) mapping to 2p25.1, RRM2B (human) mapping to 8q22.3; Rrm2 (mouse) mapping to 12 A1.3, Rrm2b (mouse) mapping to 15 B3.1.

### SOURCE

R2 (H-300) is a rabbit polyclonal antibody raised against amino acids 90-389 mapping at the C-terminus of R2 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.

### APPLICATIONS

R2 (H-300) is recommended for detection of R2 and p53R2 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).

R2 (H-300) is also recommended for detection of R2 and p53R2 in additional species, including equine, canine, bovine, porcine and avian.

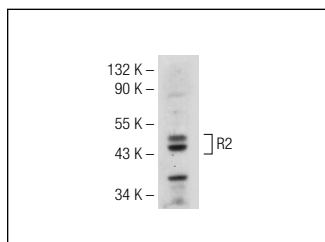
Molecular Weight of R2: 45 kDa.

Positive Controls: SW480 cell lysate: sc-2219, A-431 whole cell lysate: sc-2201 or K-562 whole cell lysate: sc-2203.

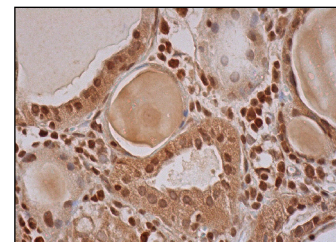
### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

### DATA



R2 (H-300): sc-22785. Western blot analysis of R2 expression in SW480 whole cell lysate.



R2 (H-300): sc-22785. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear and cytoplasmic staining of glandular cells.

### SELECT PRODUCT CITATIONS

1. Eaton, J.S., et al. 2007. Ataxia-telangiectasia mutated kinase regulates ribonucleotide reductase and mitochondrial homeostasis. *J. Clin. Invest.* 117: 2723-2734.

### 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) or our catalog for detailed protocols and support products.



Try **R2/p53R2 (F-9): sc-376973** or **R2 (A-5): sc-398294**, our highly recommended monoclonal alternatives to R2/p53R2 (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **R2/p53R2 (F-9): sc-376973**.