

R2 (E-16): sc-10846

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.

CHROMOSOMAL LOCATION

Genetic locus: RRM2 (human) mapping to 2p25.1; Rrm2 (mouse) mapping to 12 A1.3.

SOURCE

R2 (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-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.

Blocking peptide available for competition studies, sc-10846 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

R2 (E-16) is recommended for detection of R2 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 (E-16) is also recommended for detection of R2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for R2 siRNA (h): sc-36338, R2 siRNA (m): sc-36339, R2 shRNA Plasmid (h): sc-36338-SH, R2 shRNA Plasmid (m): sc-36339-SH, R2 shRNA (h) Lentiviral Particles: sc-36338-V and R2 shRNA (m) Lentiviral Particles: sc-36339-V.

Molecular Weight of R2: 45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or K-562 whole cell lysate: sc-2203.

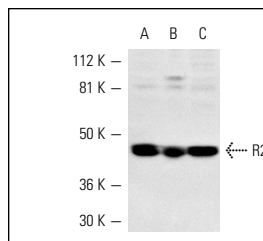
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

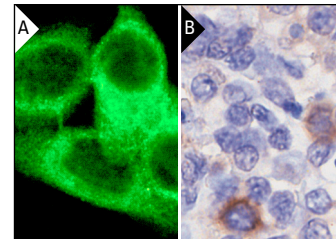
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



R2 (E-16): sc-10846. Western blot analysis of R2 expression in HeLa (A), A-431 (B) and K-562 (C) whole cell lysates.



R2 (E-16): sc-10846. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma showing cytoplasmic staining (B).

SELECT PRODUCT CITATIONS

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- Eaton, J.S., et al. 2007. Ataxia-telangiectasia mutated kinase regulates ribonucleotide reductase and mitochondrial homeostasis. *J. Clin. Invest.* 117: 2723-2734.
- Hrecka, K., et al. 2007. Lentiviral Vpr usurps CUL-4-DDB1[VprBP] E3 ubiquitin ligase to modulate cell cycle. *Proc. Natl. Acad. Sci. USA* 104: 11778-11783.
- Davis, M.E., et al. 2010. Evidence of RNAi in humans from systemically administered siRNA via targeted nanoparticles. *Nature* 464: 1067-1070.
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- Vastag, L., et al. 2011. Remodeling of the metabolome during early frog development. *PLoS ONE* 6: e16881.
- Lin, Z.P., et al. 2011. Reduced level of ribonucleotide reductase R2 subunits increases dependence on homologous recombination repair of cisplatin-induced DNA damage. *Mol. Pharmacol.* 80: 1000-1012.
- Lu, A.G., et al. 2012. Emerging roles of the ribonucleotide reductase M2 in colorectal cancer and ultraviolet-induced DNA damage repair. *World J. Gastroenterol.* 18: 4704-4713.



Try **R2/p53R2 (F-9): sc-376973** or **R2 (A-5): sc-398294**, our highly recommended monoclonal alternatives to R2 (E-16). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **R2/p53R2 (F-9): sc-376973**.