

RFC5 (H-180): sc-20997

BACKGROUND

Replication factor C (RFC) is an essential DNA polymerase accessory protein that is required for numerous aspects of DNA metabolism including DNA replication, DNA repair, and telomere metabolism. RFC is a heteropentameric complex that recognizes a primer on a template DNA, binds to a primer terminus, and loads proliferating cell nuclear antigen (PCNA) onto DNA at primer-template junctions in an ATP-dependent reaction. All five of the RFC subunits share a set of related sequences (RFC boxes) that include nucleotide-binding consensus sequences. Four of the five RFC genes (RFC1, RFC2, RFC3, and RFC4) have consensus ATP-binding motifs. The small RFC proteins, RFC2, RFC3, RFC4 and RFC5, interact with Rad24, whereas the RFC1 subunit does not. The human RFC5 gene maps to chromosome 12q24.23 and encodes the RFC5 subunit. RFC5 and RAD24 are required for DNA damage checkpoint control in the budding yeast *Saccharomyces cerevisiae*. RFC5 is part of a mechanism transducing the DNA damage signal to the activation of the central transducer Rad53.

REFERENCES

1. Cullmann, G., et al. 1995. Characterization of the five replication factor C genes of *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 15: 4661-4671.
2. Sugimoto, K., et al. 1997. *Rfc5*, a replication factor C component, is required for regulation of Rad53 protein kinase in the yeast checkpoint pathway. *Mol. Cell. Biol.* 17: 5905-5914.
3. Beckwith, W.H., et al. 1998. Destabilized PCNA trimers suppress defective Rfc1 proteins *in vivo* and *in vitro*. *Biochemistry* 37: 3711-3722.
4. Noskov, V.N., et al. 1998. The RFC2 gene, encoding the third-largest subunit of the replication factor C complex, is required for an S-phase checkpoint in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 18: 4914-4923.
5. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 600405. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Green, C.M., et al. 2000. A novel Rad24 checkpoint protein complex closely related to replication factor C. *Curr. Biol.* 10: 39-42.
7. Naiki, T., et al. 2000. *Rfc5*, in cooperation with *rad24*, controls DNA damage checkpoints throughout the cell cycle in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 20: 5888-5896.
8. Schmidt, S.L., et al. 2001. ATP utilization by yeast replication factor C. IV. RFC ATP-binding mutants show defects in DNA replication, DNA repair, and checkpoint regulation. *J. Biol. Chem.* 276: 34792-34800.

CHROMOSOMAL LOCATION

Genetic locus: RFC5 (human) mapping to 12q24.23; *Rfc5* (mouse) mapping to 5 F.

SOURCE

RFC5 (H-180) is a rabbit polyclonal antibody raised against amino acids 161-340 mapping at the C-terminus of RFC5 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

RFC5 (H-180) is recommended for detection of RFC5 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RFC5 (H-180) is also recommended for detection of RFC5 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for RFC5 siRNA (h): sc-37637, RFC5 siRNA (m): sc-37638, RFC5 shRNA Plasmid (h): sc-37637-SH, RFC5 shRNA Plasmid (m): sc-37638-SH, RFC5 shRNA (h) Lentiviral Particles: sc-37637-V and RFC5 shRNA (m) Lentiviral Particles: sc-37638-V.

Molecular Weight of RFC5: 38 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or HeLa nuclear extract: sc-2120.

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.

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.



Try **RFC5 (F-9): sc-376528**, our highly recommended monoclonal alternative to RFC5 (H-180).