

RFC3 (N-19): sc-21884

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. RFC3 is required not only for DNA replication, but also for replication and damage checkpoint controls, probably functioning as a checkpoint sensor. The human RFC3 gene maps to chromosome 13q13.2 and encodes the RFC3 subunit. In *Saccharomyces cerevisiae*, purified RFC3 has an ATPase activity that is markedly stimulated by single-stranded DNA but not by double-stranded DNA or RNA.

REFERENCES

- Li, X., et al. 1994. Molecular cloning and expression of the *Saccharomyces cerevisiae* RFC3 gene, an essential component of replication factor C. Proc. Natl. Acad. Sci. USA 91: 868-872.
- Cullmann, G., et al. 1995. Characterization of the five replication factor C genes of *Saccharomyces cerevisiae*. Mol. Cell. Biol. 15: 4661-4671.
- Beckwith, W.H., et al. 1998. Destabilized PCNA trimers suppress defective Rfc1 proteins *in vivo* and *in vitro*. Biochem. 37: 3711-3722.
- 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.
- Shimada, M., et al. 1999. Replication factor C3 of *Schizosaccharomyces pombe*, a small subunit of replication factor C complex, plays a role in both replication and damage checkpoints. Mol. Biol. Cell 10: 3991-4003.
- Green, C.M., et al. 2000. A novel Rad24 checkpoint protein complex closely related to replication factor C. Curr. Biol. 10: 39-42.
- 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: RFC3 (human) mapping to 13q13.2; Rfc3 (mouse) mapping to 5 G3.

SOURCE

RFC3 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of RFC3 of human origin.

STORAGE

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

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-21884 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RFC3 (N-19) is recommended for detection of RFC3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RFC3 (N-19) is also recommended for detection of RFC3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for RFC3 siRNA (h): sc-37635, RFC3 siRNA (m): sc-37636, RFC3 shRNA Plasmid (h): sc-37635-SH, RFC3 shRNA Plasmid (m): sc-37636-SH, RFC3 shRNA (h) Lentiviral Particles: sc-37635-V and RFC3 shRNA (m) Lentiviral Particles: sc-37636-V.

Molecular Weight of RFC3: 38 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.


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Try **RFC3 (G-10): sc-390293**, our highly recommended monoclonal alternative to RFC3 (N-19).