

RFC1 (H-300): sc-20993

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 (including 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. RFC1 is a substrate for caspase-3 *in vitro* and is cleaved by a caspase-3-like protease during FAS-mediated apoptosis. In addition, phosphorylation of the PCNA binding domain of RFC1 by Ca²⁺/calmodulin-dependent protein kinase II (CaMKII) inhibits DNA synthesis. The human RFC1 gene maps to chromosome 4p14-p13 and encodes the RFC1 subunit.

CHROMOSOMAL LOCATION

Genetic locus: RFC1 (human) mapping to 4p14; Rfc1 (mouse) mapping to 5 C3.1.

SOURCE

RFC1 (H-300) is a rabbit polyclonal antibody raised against amino acids 848-1147 mapping at the C-terminus of RFC1 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.

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.

APPLICATIONS

RFC1 (H-300) is recommended for detection of RFC1 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).

Suitable for use as control antibody for RFC1 siRNA (h): sc-37631, RFC-1 siRNA (m): sc-37632, RFC1 shRNA Plasmid (h): sc-37631-SH, RFC-1 shRNA Plasmid (m): sc-37632-SH, RFC1 shRNA (h) Lentiviral Particles: sc-37631-V and RFC-1 shRNA (m) Lentiviral Particles: sc-37632-V.

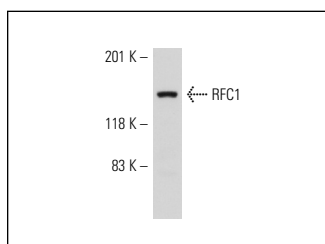
Molecular Weight of RFC1: 140 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

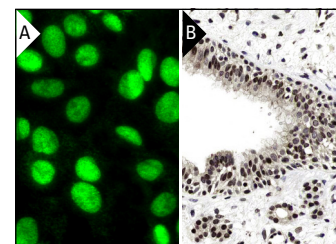
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



RFC1 (H-300): sc-20993. Western blot analysis of RFC1 expression in HeLa nuclear extract.



RFC1 (H-300): sc-20993. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing nuclear staining of surface epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

- Tomida, J., et al. 2008. DNA damage-induced ubiquitylation of RFC2 subunit of replication factor C complex. *J. Biol. Chem.* 283: 9071-9079.
- Shiomi, Y., et al. 2012. Two different replication factor C proteins, Ctf18 and RFC1, separately control PCNA-CRL4Cdt2-mediated Cdt1 proteolysis during S phase and following UV irradiation. *Mol. Cell. Biol.* 32: 2279-2288.
- Wang, X., et al. 2013. Recruitment of Brd4 to the human papillomavirus type 16 DNA replication complex is essential for replication of viral DNA. *J. Virol.* 87: 3871-3884.
- Diaz, J., et al. 2014. Phosphorylation of large T antigen regulates merkel cell polyomavirus replication. *Cancers* 6: 1464-1486.



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Try **RFC1 (B-5): sc-271656**, our highly recommended monoclonal alternative to RFC1 (H-300).