SANTA CRUZ BIOTECHNOLOGY, INC.

TRF1 (N-19)-R: sc-6165-R

BACKGROUND

Telomeric repeat binding factor 1 (TRF1, TERF1, PIN2, TRBF1) and telomeric repeat binding factor 2 (TRF2, TERF2, TRBF2) are present at telomeres throughout the cell cycle, where they regulate telomerase by acting in *cis* to limit the elongation of individual chromosome ends. Telomerase adds hexameric repeats of 5'-TTAGGG-3' to the ends of chromosomal DNA. This telomerase enzyme plays an influential role in cellular immortalization and cellular senescence. TRF1 negatively regulates telomere elongation, while TRF2 protects the chromosome ends by inhibiting end-to-end fusions. Downregulation of TRF expression in tumor cells may contribute to cell immortalization and malignant progression. TRF1 has an acidic N-terminus while TRF2 has a basic N-terminus. TRF2 localizes in the nucleolus at G_0 and S and diffuses out of the nucleolus in G_2 phase. During mitosis TRF2 disperses from the condensed chromosomes and returns to the nucleolus at cytokinesis.

CHROMOSOMAL LOCATION

Genetic locus: TERF1 (human) mapping to 8q13.

SOURCE

TRF1 (N-19)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping N-terminus (h) of TRF1 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-6165 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TRF1 (N-19)-R is recommended for detection of TRF1 of 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); may cross-react with TERF1P2.

Suitable for use as control antibody for TRF1 siRNA (h): sc-36722, TRF1 shRNA Plasmid (h): sc-36722-SH and TRF1 shRNA (h) Lentiviral Particles: sc-36722-V.

Molecular Weight of TRF1: 60 kDa.

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.

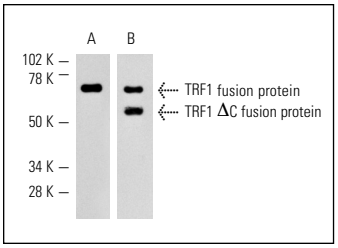
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

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.

DATA



Western blot analysis of full length and C-terminally deleted human recombinant TRF1 fusion protein (**A**,**B**). Antibodies tested include TRF1 (C-19): sc-1977 (**A**) and TRF1 (N-19): sc-6165 (**B**).

SELECT PRODUCT CITATIONS

1. Pathak, S., et al. 2000. Anvirzel, an extract of Nerium oleander, induces cell death in human but not murine cancer cells. Anticancer Drugs 11: 455-463.
2. Igarashi, M., et al. 2003. Interferon can block telomere erosion and in rare cases result in hepatocellular carcinoma development with telomeric repeat binding factor 1 overexpression in chronic hepatitis C. Clin. Cancer Res. 9: 5264-5270.
3. Lillard-Wetherell, K., et al. 2004. Association and regulation of the BLM helicase by the telomere proteins TRF1 and TRF2. Hum. Mol. Genet. 13: 1919-1932.
4. Lim, S., et al. 2007. Distinct mechanisms involving diverse histone deacetylases repress expression of the two gonadotropin β-subunit genes in immature gonadotropes, and their actions are overcome by gonadotropin-releasing hormone. Mol. Cell. Biol. 27: 4105-4120.
5. Berardinelli, F., et al. 2015. The G-quadruplex-stabilising agent RHPS4 induces telomeric dysfunction and enhances radiosensitivity in glioblastoma cells. DNA Repair 25: 104-115.