

# TRF1 (E-15): sc-5475

## 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. Down-regulation 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<sub>0</sub> and S and diffuses out of the nucleolus in G<sub>2</sub> phase. During mitosis TRF2 disperses from the condensed chromosomes and returns to the nucleolus at cytokinesis.

## REFERENCES

- Aragona, M., et al. 2000. Immunohistochemical TRF1 expression in gastrointestinal tumors. *Oncol. Rep.* 7: 987-990.
- Matsutani, N., et al. 2001. Expression of TRF1 and 2 and TRF1-interacting nuclear protein 2 in human gastric carcinomas. *Int. J. Oncol.* 19: 507-512.
- Yajima, T., et al. 2001. Telomerase reverse transcriptase and TRF1 as regulators of telomerase activity in pancreatic cancer cells. *Br. J. Cancer* 85: 752-757.
- Seimiya, H., et al. 2002. The telomeric poly(ADP-ribose) polymerase, Tankyrase-1, contains multiple binding sites for telomeric repeat binding factor 1 (TRF1) and a novel acceptor, 182 kDa Tankyrase-binding protein (TAB182). *J. Biol. Chem.* 277: 14116-14126.
- Nakanishi, K., et al. 2003. Expression of mRNAs for telomeric repeat binding factor (TRF)-1 and TRF2 in atypical adenomatous hyperplasia and adenocarcinoma of the lung. *Clin. Cancer Res.* 9: 1105-1111.
- Yang, S.W., et al. 2003. Expression of the telomeric repeat binding factor gene NgTRF1 is closely coordinated with the cell division program in tobacco BY-2 suspension culture cells. *J. Biol. Chem.* 278: 21395-21407.

## CHROMOSOMAL LOCATION

Genetic locus: TERF1 (human) mapping to 8q13; Terf1 (mouse) mapping to 1 E3.

## SOURCE

TRF1 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus 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-5475 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TRF1 (E-15) is recommended for detection of TRF1 of mouse and rat 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).

Suitable for use as control antibody for TRF1 siRNA (m): sc-36723, TRF1 shRNA Plasmid (m): sc-36723-SH and TRF1 shRNA (m) Lentiviral Particles: sc-36723-V.

Molecular Weight of TRF1: 60 kDa.

## 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.

## SELECT PRODUCT CITATIONS

- Chang, S., et al. 2003. Telomere-based crisis: functional differences between telomerase activation and ALT in tumor progression. *Genes Dev.* 17: 88-100.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.