

TRF2 (4A794): sc-52968

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 G₀ and S and diffuses out of the nucleolus in G₂ 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.
- Zhang, S., et al. 2004. Nucleolar localization of the human telomeric repeat binding factor 2 (TRF2). *J. Cell Sci.* 117: 3935-3945.
- La Torre, D., et al. 2005. Expression of TRF1 in astroglial brain tumors. *Neurosurgery* 56: 802-810.

CHROMOSOMAL LOCATION

Genetic locus: TERF2 (human) mapping to 16q22.1.

SOURCE

TRF2 (4A794) is a mouse monoclonal antibody raised against full length TRF2 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

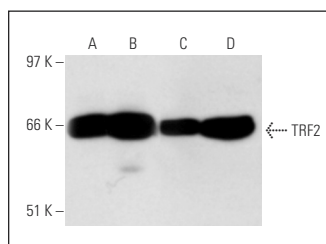
TRF2 (4A794) is recommended for detection of TRF2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TRF2 siRNA (h): sc-38505, TRF2 shRNA Plasmid (h): sc-38505-SH and TRF2 shRNA (h) Lentiviral Particles: sc-38505-V.

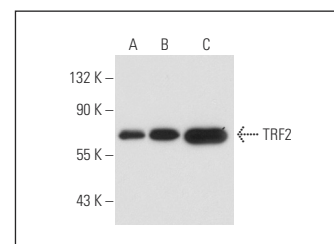
Molecular Weight of TRF2: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or TRF2 (h): 293T Lysate: sc-113675.

DATA



TRF2 (4A794): sc-52968. Western blot analysis of TRF2 expression in K-562 (A) and Jurkat (B) nuclear extracts and K-562 (C) and NAMALWA (D) whole cell lysates.



TRF2 (4A794): sc-52968. Western blot analysis of TRF2 expression in non-transfected 293T: sc-117752 (A), human TRF2 transfected 293T: sc-113675 (B) and HeLa (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Yu, Y., et al. 2017. Withaferin-A kills cancer cells with and without telomerase: chemical, computational and experimental evidences. *Cell Death Dis.* 8: e2755.
- Robinson, H., et al. 2022. Telomere attrition in induced pluripotent stem cell-derived neurons from ALS/FTD-related C9ORF72 repeat expansion carriers. *Front. Cell Dev. Biol.* 10: 874323.

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 for detailed protocols and support products.