

TRF1 (G-7): sc-271485

BACKGROUND

Telomeric repeat binding factor 1 (TERF1, PIN2, TRF1, TRBF1) and 2 (TERF2, TRF2, 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 G₀/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

1. Aragona, M., et al. 2000. Immunohistochemical telomeric-repeat binding factor 1 expression in gastrointestinal tumors. *Oncol. Rep.* 7: 987-990.
2. Matsutani, N., et al. 2001. Expression of telomeric repeat binding factor 1 and 2 and TRF1-interacting nuclear protein 2 in human gastric carcinomas. *Int. J. Oncol.* 19: 507-512.
3. Yajima, T., et al. 2001. Telomerase reverse transcriptase and telomeric-repeat binding factor protein 1 as regulators of telomerase activity in pancreatic cancer cells. *Br. J. Cancer* 85: 752-757.
4. 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.

CHROMOSOMAL LOCATION

Genetic locus: TERF1 (human) mapping to 8q21.11.

SOURCE

TRF1 (G-7) is a mouse monoclonal antibody raised against amino acids 155-396 mapping within an internal region of TRF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TRF1 (G-7) is available conjugated to agarose (sc-271485 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271485 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271485 PE), fluorescein (sc-271485 FITC), Alexa Fluor® 488 (sc-271485 AF488), Alexa Fluor® 546 (sc-271485 AF546), Alexa Fluor® 594 (sc-271485 AF594) or Alexa Fluor® 647 (sc-271485 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271485 AF680) or Alexa Fluor® 790 (sc-271485 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

TRF1 (G-7) is recommended for detection of TRF1 of human origin by Western Blotting (starting dilution 1:100, 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 TRF1 siRNA (h): sc-36722, TRF1 shRNA Plasmid (h): sc-36722-SH and TRF1 shRNA (h) Lentiviral Particles: sc-36722-V.

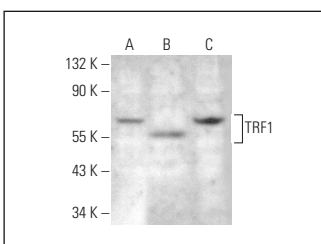
Molecular Weight of TRF1: 60 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or Raji whole cell lysate: sc-364236.

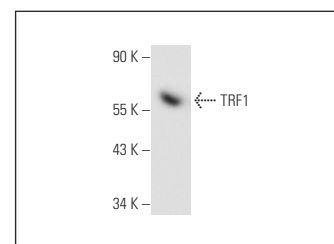
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BPFITC: sc-516140 or m-IgGκ BPE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TRF1 (G-7): sc-271485. Western blot analysis of TRF1 expression in PC-12 (A), Raji (B) and F9 (C) whole cell lysates.



TRF1 (G-7): sc-271485. Western blot analysis of TRF1 expression in Jurkat whole cell lysate.

SELECT PRODUCT CITATIONS

1. Hsiao, C.B., et al. 2021. Telomere length shortening in microglia: implication for accelerated senescence and neurocognitive deficits in HIV. *Vaccines* 9: 721.
2. Kang, S., et al. 2021. Transcriptional regulation of telomeric repeat-containing RNA by acridine derivatives. *RNA Biol.* E-published.

STORAGE

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

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