10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TERF2 Antibody

Catalog # ASC11776

Product Information

Application	WB, E, IHC-P
Primary Accession	Q15554
Other Accession	NP_005643, 429535832
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	59594
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TERF2 antibody can be used for detection of TERF2 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry at 5 g/mL.

Additional Information

Gene ID	7014
Other Names	Telomeric repeat-binding factor 2, TTAGGG repeat-binding factor 2, Telomeric DNA-binding protein, TERF2, TRBF2, TRF2
Target/Specificity	TERF2; TERF2 antibody is human specific.
Reconstitution & Storage	TERF2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	TERF2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TERF2
Synonyms	TRBF2, TRF2 {ECO:0000303|PubMed:28216226
Function	Binds the telomeric double-stranded 5'-TTAGGG-3' repeat and plays a central role in telomere maintenance and protection against end-to-end fusion of chromosomes (PubMed:15608617, PubMed:16166375, PubMed:20655466, PubMed:28216226, PubMed:9326950, PubMed:9326951, PubMed:9476899). In addition to its telomeric DNA-binding role, required to recruit a number of factors and enzymes required for telomere protection, including the shelterin complex, TERF2IP/RAP1 and DCLRE1B/Apollo (PubMed:16166375, PubMed:20655466). Component of the shelterin complex (telosome) that is involved in the regulation of telomere length and protection (PubMed:16166375). Shelterin associates with arrays of double-stranded

	5'-TTAGGG-3' repeats added by telomerase and protects chromosome ends; without its protective activity, telomeres are no longer hidden from the DNA damage surveillance and chromosome ends are inappropriately processed by DNA repair pathways (PubMed:16166375). Together with DCLRE1B/Apollo, plays a key role in telomeric loop (T loop) formation by generating 3' single-stranded overhang at the leading end telomeres: T loops have been proposed to protect chromosome ends from degradation and repair (PubMed:20655466). Required both to recruit DCLRE1B/Apollo to telomeres and activate the exonuclease activity of DCLRE1B/Apollo (PubMed:20655466, PubMed:28216226). Preferentially binds to positive supercoiled DNA (PubMed:15608617, PubMed:20655466). Together with DCLRE1B/Apollo, required to control the amount of DNA topoisomerase (TOP1, TOP2A and TOP2B) needed for telomere replication during fork passage and prevent aberrant telomere topology (PubMed:20655466). Recruits TERF2IP/RAP1 to telomeres, thereby participating in to repressing homology-directed repair (HDR), which can affect telomere length (By similarity).
Cellular Location	Nucleus {ECO:0000255|PROSITE-ProRule:PRU00625, ECO:0000269|PubMed:20655466}. Chromosome, telomere. Note=Colocalizes with telomeric DNA in interphase cells and is located at chromosome ends during metaphase
Tissue Location	Ubiquitous. Highly expressed in spleen, thymus, prostate, uterus, testis, small intestine, colon and peripheral blood leukocytes.

Background

The telomeric repeat binding factor family (TERF1 and TERF2) plays a key role in cellular immortalization and cellular senescence (1). TERF2, as a component of the telomere nucleoprotein complex, is present at telomeres in metaphase of the cell cycle (2). TERF2 is a second negative regulator of telomere length and binds as a dimer to TTAGGG repeats at ends of chromosomes (telomeres), where it blocks inappropriate activation of the ATM/p53 pathway (2,3). TERF1 negatively regulates telomere elongation, while TERF2 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 (4,5).

References

Broccoli D, Smogorzewska A, Chong L, et al. Human telomeres contain two distinct Myb-related proteins, TRF1 and TRF2. Nat. Genet. 1997; 17:231-5.

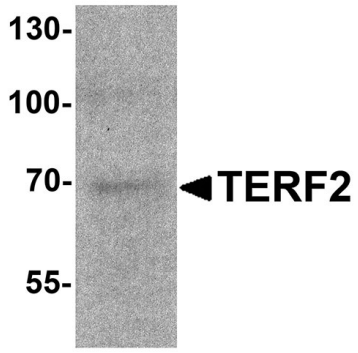
Bilaud T, Brun C, Ancelin K, et al. Telomeric localization of TRF2, a novel human telobox protein. Nat. Genet. 1997; 17:236-9.

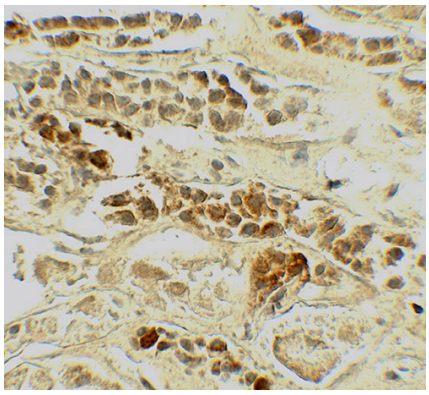
van Steensel B and Smogorzewska A. TRF2 protects human telomeres from end-to-end fusions. Cell 1998; 92:401-13.

Matsutani N, Yokozaki H, Tahara E, et al. Expression of TRF1 and 2 and TRF1-interacting nuclear protein 2 in human gastric carcinomas. Int. J. Oncol. 2001; 19:507-12.

Images

Western blot analysis of TERF2 in 293 cell lysate with TERF2 antibody at 1 µg/ml.





Immunohistochemistry of TERF2 in human kidney tissue with TERF2 antibody at 5 µg/mL.