abcam

ab108997

Anti-TRF2 antibody [EPR3517(2)]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR3517(2)
Purification technique	Affinity purification Protein A
Concentration	3.471 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/300
Notes	**For unpurified use at 1/100 - 1/250.**

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/300
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/1000
Notes	**For unpurified use at 1/250 - 1/500.**

Target data

See full target information TERF2

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:31595153, 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).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Stable for 12 months at -20°C

Notes

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	TRF2 also known as Telomeric Repeat-binding Factor 2 is a protein important for telomere protection and maintenance. TRF2 weighs approximately 55 kDa and is widely expressed in human tissues especially in those with high turnover rates. This protein binds specifically to double-stranded telomeric DNA and forms a protective cap at the end of chromosomes helping to regulate telomere length and integrity. By securing the telomere's structure TRF2 prevents chromosomes from being recognized as damaged DNA.
Biological function summary	TRF2 plays a central role in telomere function by assembling into the shelterin complex. This complex which includes other proteins like TRF1 TIN2 POT1 TPP1 and RAP1 is essential for controlling telomere length and stability. TRF2 is responsible for inhibiting DNA damage response pathways at telomeres ensuring that the natural chromosomal ends are not mistaken for double-strand breaks. This suppression of unwanted DNA damage response is important for normal cell division and avoiding cellular senescence.
Pathways	Researchers have placed TRF2 within the DNA repair and telomere maintenance pathways. TRF2 interacts with several other proteins such as Ku70/80 and RAD51 that are instrumental in the DNA repair process. Furthermore TRF2 influences the Alternative Lengthening of Telomeres (ALT) pathway which is a telomere lengthening process found in some cancer cells. These connections highlight TRF2's role in maintaining genomic stability through its capacity to regulate telomere-associated proteins and pathways.
Associated diseases and disorders	TRF2 has been linked to cancer and aging. Elevated levels of TRF2 have been detected in various cancers including breast and prostate cancer suggesting a role in tumorigenesis where it contributes to the stability of cancer cell telomeres. Additionally defects in TRF2 or its interaction with partner proteins like POT1 can lead to dysfunctional telomeres which contribute to the aging process and age-related diseases by affecting cell proliferation and survival. These links demonstrate the importance of TRF2 in normal cellular function and its potential as a therapeutic target in disease intervention.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

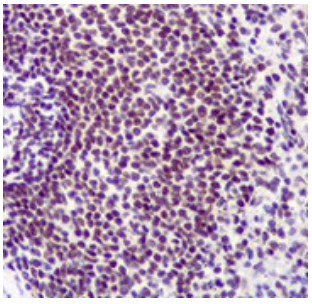
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

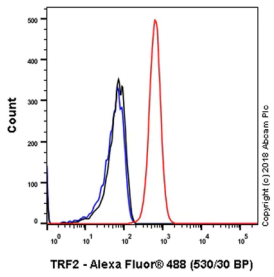
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

TRF2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TRF2 antibody

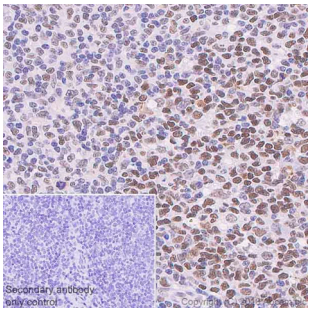
ab108997 at 1/250 dilution staining TRF2 in Human spleen by Immunohistochemistry, Paraffin-embedded tissue.
This image was generated using the unpurified version of the product.



Flow Cytometry (Intracellular) - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

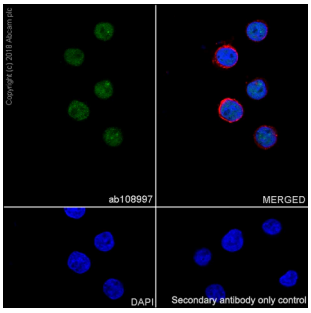
TRF2 Flow Cytometry (Intracellular) staining using rabbit Anti-TRF2 antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling TRF2 with Purified ab108997 at 1/300 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

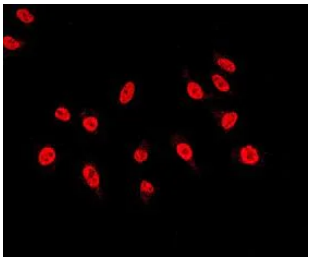
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human tonsil tissue sections labeling TRF2 with Purified ab108997 at 1:1000 dilution (3.4 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody. Negative control:PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

TRF2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TRF2 antibody

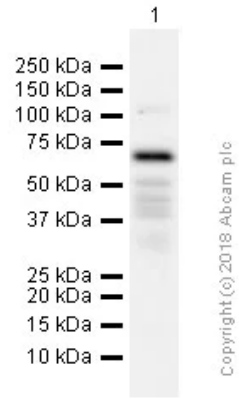
Immunocytochemistry/ Immunofluorescence analysis of Jurkat (Human T cell leukemia T lymphocyte) cells labeling TRF2 with Purified ab108997 at 1:300 dilution (10 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunocytochemistry/ Immunofluorescence - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

TRF2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TRF2 antibody

ab108997 at 1/100 dilution staining TRF2 in HeLa cells by Immunofluorescence.
This image was generated using the unpurified version of the product.



Western blot - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

TRF2 Western blot staining of HT-29 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate using rabbit Anti-TRF2 antibody

Blocking and dilution buffer: 5%NFDM/TBST
All lanes:
Western blot - Anti-TRF2 antibody [EPR3517(2)] (ab108997) at 1/1000 dilution

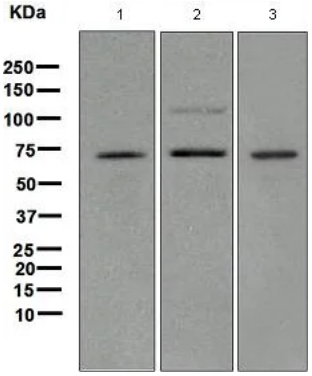
All lanes:
HT-29 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 56 kDa

Observed band size: 62 kDa



Western blot - Anti-TRF2 antibody [EPR3517(2)] (ab108997)

TRF2 Western blot staining using rabbit Anti-TRF2 antibody

This image was generated using the unpurified version of the product.
All lanes:
Western blot - Anti-TRF2 antibody [EPR3517(2)] (ab108997) at 1/1000 dilution

Lane 1:
HT29 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
Jurkat cell lysate at 10 µg

Predicted band size: 56 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.