abcam

ab14397

Anti-TRF1 antibody [3H11]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human TERF1. Database link P54274
Clone number	3H11
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/100 - 1/200
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Target data

See full target information TERF1

Function	Binds the telomeric double-stranded 5'-TTAGGG-3' repeat and negatively regulates telomere length (PubMed:31595153). Involved in the regulation of the mitotic spindle. Component of the shelterin complex (telosome) that is involved in the regulation of telomere length and protection. 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.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

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

Activity summary	TRF1 also known as TERF1 (Telomeric Repeat Binding Factor 1) is an important protein involved in telomere maintenance. This protein has a molecular mass of approximately 55 kDa. TRF1 localizes specifically to telomeres and plays an essential role in shelterin complex formation a specialized protein complex that protects chromosome ends. TRF1 is highly expressed in proliferating cells and tissues especially those with a high rate of cell division.
Biological function summary	TRF1 contributes to the stabilization of telomere structure and regulates telomere length. TRF1 is a part of the shelterin complex which also includes proteins such as TRF2 POT1 TIN2 RAP1 and TPP1. The shelterin complex prevents the telomeres from being recognized as DNA damage and regulates their replicative processes. TRF1 interacts directly with telomeric DNA influencing replication and modulating access to telomerase the enzyme responsible for telomere elongation.
Pathways	TRF1 plays a significant role in telomere maintenance and the cell cycle. The protein is critical in the DNA damage response pathway where it prevents unwanted DNA repair activities at telomeres. In this context TRF1 interacts with proteins like ATM and ATR which are important for signaling and responding to DNA damage. TRF1's interaction with these pathways helps maintain genomic stability and cellular homeostasis.
Associated diseases and disorders	Alterations in TRF1 function can contribute to cancer and aging-related diseases. High levels or overexpression of TRF1 are frequently observed in certain cancers where it may help tumor cells maintain telomeres and proliferate indefinitely. Conversely lower TRF1 levels are associated with premature aging disorders such as dyskeratosis congenita. In these conditions the connection between TRF1 and TRF2 within the shelterin complex plays an important role in maintaining telomere integrity affecting disease development and progression.

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

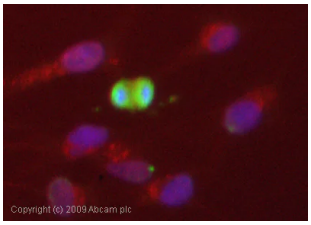
We do not recommend this combination. It is not covered by our product promise.

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.

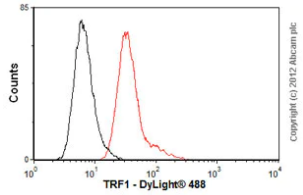
2 product images



Immunocytochemistry/ Immunofluorescence - Anti-TRF1 antibody [3H11] (ab14397)

TRF1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-TRF1 antibody

ICC/IF image of ab14397 stained HepG2 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab14397, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Flow Cytometry - Anti-TRF1 antibody [3H11] (ab14397)

TRF1 Flow Cytometry staining using mouse Anti-TRF1 antibody

Overlay histogram showing HeLa cells stained with ab14397 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab14397, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

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