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TERT Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1410C

Product Information

Application	WB, IF, FC, E
Primary Accession	O14746
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB14069
Calculated MW	126997
Antigen Region	627-656

Additional Information

Gene ID	7015
Other Names	Telomerase reverse transcriptase, HEST2, Telomerase catalytic subunit, Telomerase-associated protein 2, TP2, TERT, EST2, TCS1, TRT
Target/Specificity	This TERT antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 627-656 amino acids from the Central region of human TERT.
Dilution	WB~~1:2000 IF~~1:200 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TERT Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TERT
Synonyms	EST2, TCS1, TRT
Function	Telomerase is a ribonucleoprotein enzyme essential for the replication of

	chromosome termini in most eukaryotes. Active in progenitor and cancer cells. Inactive, or very low activity, in normal somatic cells. Catalytic component of the teleromerase holoenzyme complex whose main activity is the elongation of telomeres by acting as a reverse transcriptase that adds simple sequence repeats to chromosome ends by copying a template sequence within the RNA component of the enzyme. Catalyzes the RNA-dependent extension of 3'-chromosomal termini with the 6-nucleotide telomeric repeat unit, 5'-TTAGGG-3'. The catalytic cycle involves primer binding, primer extension and release of product once the template boundary has been reached or nascent product translocation followed by further extension. More active on substrates containing 2 or 3 telomeric repeats. Telomerase activity is regulated by a number of factors including telomerase complex- associated proteins, chaperones and polypeptide modifiers. Modulates Wnt signaling. Plays important roles in aging and antiapoptosis.
Cellular Location	Nucleus, nucleolus. Nucleus, nucleoplasm. Nucleus. Chromosome, telomere. Cytoplasm Nucleus, PML body. Note=Shuttling between nuclear and cytoplasm depends on cell cycle, phosphorylation states, transformation and DNA damage Diffuse localization in the nucleoplasm. Enriched in nucleoli of certain cell types. Translocated to the cytoplasm via nuclear pores in a CRM1/RAN-dependent manner involving oxidative stress-mediated phosphorylation at Tyr-707. Dephosphorylation at this site by SHP2 retains TERT in the nucleus. Translocated to the nucleus by phosphorylation by AKT
Tissue Location	Expressed at a high level in thymocyte subpopulations, at an intermediate level in tonsil T-lymphocytes, and at a low to undetectable level in peripheral blood T-lymphocytes

Background

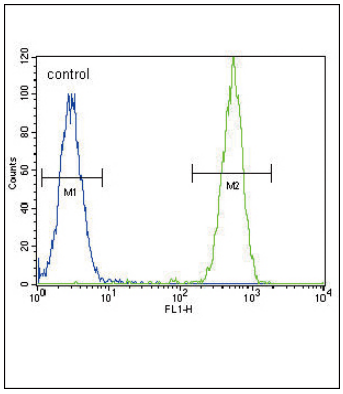
Telomerase is a ribonucleoprotein polymerase that maintains telomere ends by addition of the telomere repeat TTAGGG. The enzyme consists of a protein component with reverse transcriptase activity, encoded by this gene, and an RNA component which serves as a template for the telomere repeat. Telomerase expression plays a role in cellular senescence, as it is normally repressed in postnatal somatic cells resulting in progressive shortening of telomeres. Deregulation of telomerase expression in somatic cells may be involved in oncogenesis. Studies in mouse suggest that telomerase also participates in chromosomal repair, since de novo synthesis of telomere repeats may occur at double-stranded breaks.

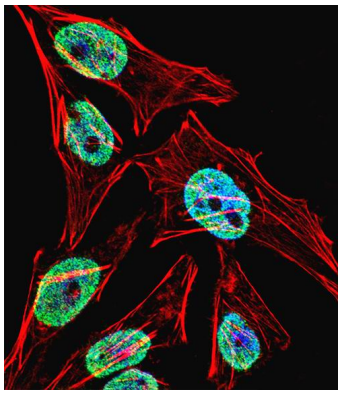
References

References for protein:
1.Sekaric,P., J. Virol. 82 (1), 71-76 (2008)
2.Okawa,T., Genes Dev. 21 (21), 2788-2803 (2007)
References for SY5Y (SH-SY5Y; ATCC#CRL-2266): 1. Ross RA, et al. Coordinate morphological and biochemical interconversion of human neuroblastoma cells. J. Natl. Cancer Inst. 71: 741-749, 1983. [PubMed: 6137586]; 2. Biedler JL, et al. Multiple neurotransmitter synthesis by human neuroblastoma cell lines and clones. Cancer Res. 38: 3751-3757, 1978. [PubMed: 29704].

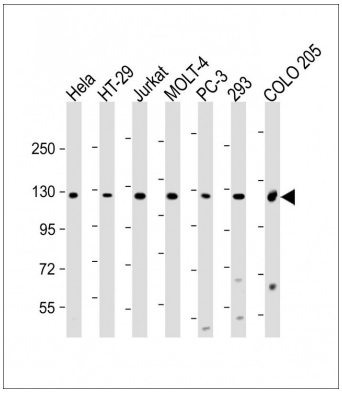
Images

TERT Antibody (Center) (Cat. #AP1410c) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.





Fluorescent confocal image of Hela cell stained with TERT Antibody (Center)(Cat#AP1410c).Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with TERT primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min). TERT immunoreactivity is localized to Nucleus significantly and Cytoplasm weakly.



All lanes : Anti-TERT Antibody (Center) at 1:2000 dilution Lane 1: Hela whole cell lysate Lane 2: HT-29 whole cell lysate Lane 3: Jurkat whole cell lysate Lane 4: MOLT-4 whole cell lysate Lane 5: PC-3 whole cell lysate Lane 6: 293 whole cell lysate Lane 7: COLO 205 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 127 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Citations

- Programmed Death Receptor 1 (PD1) Knockout and Human Telomerase Reverse Transcriptase (hTERT) Transduction Can Enhance Persistence and Antitumor Efficacy of Cytokine-Induced Killer Cells Against Hepatocellular Carcinoma.