abcam

Product datasheet

Human Telomerase reverse transcriptase peptide ab19040

製品の概要

製品名 Human Telomerase reverse transcriptase peptide

製品の詳細

由来 Synthetic

アミノ酸配列

生物種 Human

配列 C-NPALPSDFKTILD

領域 1120 to 1132

特性

Our Abpromise guarantee covers the use of **ab19040** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

アプリケーション Blocking

製品の状態 Liquid

前処理および保存

保存方法および安定性 Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

関連情報

機能 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.
組織特異性	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.
関連疾患	Note=Activation of telomerase has been implicated in cell immortalization and cancer cell pathogenesis. Defects in TERT are associated with susceptibilty to aplastic anemia (AA) [MIM:609135]. AA is a rare disease in which the reduction of the circulating blood cells results from damage to the stem cell pool in bone marrow. In most patients, the stem cell lesion is caused by an autoimmune attack. T-lymphocytes, activated by an endogenous or exogenous, and most often unknown antigenic stimulus, secrete cytokines, including IFN-gamma, which would in turn be able to suppress hematopoiesis. Note=Genetic variations in TERT are associated with coronary artery disease (CAD). Defects in TERT are a cause of dyskeratosis congenita autosomal dominant (ADDKC) [MIM:127550]; also known as dyskeratosis congenita Scoggins type. ADDKC is a rare, progressive bone marrow failure syndrome characterized by the triad of reticulated skin hyperpigmentation, nail dystrophy, and mucosal leukoplakia. Early mortality is often associated with bone marrow failure, infections, fatal pulmonary complications, or malignancy. Defects in TERT are a cause of susceptibility to pulmonary fibrosis idiopathic (IPF) [MIM:178500]. Pulmonary fibrosis is a lung disease characterized by shortness of breath, radiographically evident diffuse pulmonary infiltrates, and varying degrees of inflammation and fibrosis on biopsy. It results in acute lung injury with subsequent scarring and endstage lung disease.
配列類似性	Belongs to the reverse transcriptase family. Telomerase subfamily. Contains 1 reverse transcriptase domain.
ドメイン	The primer grip sequence in the RT domain is required for telomerase activity and for stable association with short telomeric primers. The RNA-interacting domain 1 (RD1)/N-terminal extension (NTE) is required for interaction with the pseudoknot-template domain of each of TERC dimers. It contains anchor sites that bind primer nucleotides upstream of the RNA-DNA hybrid and is thus an essential determinant of repeat addition processivity. The RNA-interacting domain 2 (RD2) is essential for both interaction with the CR4-CR5 domain of TERC and for DNA sythesis.
翻訳後修飾	Ubiquitinated, leading to proteasomal degradation. Phosphorylation at Tyr-707 under oxidative stress leads to translocation of TERT to the cytoplasm and reduces its antiapoptotic activity. Dephosphorylated by SHP2/PTPN11 leading to nuclear retention. Phosphorylation by the AKT pathway promotes nuclear location.
細胞内局在	Nucleus > nucleolus. Nucleus > nucleoplasm. Nucleus. Chromosome > telomere. Cytoplasm. Nucleus > PML body. 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.

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