**Product datasheet**

**Anti-Telomerase reverse transcriptase antibody ab191523**

**Overview**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Anti-Telomerase reverse transcriptase antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Rabbit polyclonal to Telomerase reverse transcriptase</td>
</tr>
<tr>
<td><strong>Host species</strong></td>
<td>Rabbit</td>
</tr>
<tr>
<td><strong>Tested applications</strong></td>
<td>Suitable for: WB</td>
</tr>
<tr>
<td><strong>Species reactivity</strong></td>
<td>Reacts with: Mouse, Rat, Human</td>
</tr>
<tr>
<td><strong>Immunogen</strong></td>
<td>Synthetic peptide within Human Telomerase reverse transcriptase. The exact sequence is proprietary. Database link: O14746</td>
</tr>
<tr>
<td><strong>Positive control</strong></td>
<td>Jurkat, Raw264.7 and PC12 whole cell lysates.</td>
</tr>
</tbody>
</table>

**Properties**

<table>
<thead>
<tr>
<th><strong>Form</strong></th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage instructions</strong></td>
<td>Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.</td>
</tr>
<tr>
<td><strong>Storage buffer</strong></td>
<td>pH: 7.2</td>
</tr>
<tr>
<td></td>
<td>Preservative: 0.05% Sodium azide</td>
</tr>
<tr>
<td></td>
<td>Constituent: 99% PBS</td>
</tr>
<tr>
<td><strong>Purity</strong></td>
<td>Immunogen affinity purified</td>
</tr>
<tr>
<td><strong>Purification notes</strong></td>
<td>ab191523 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen and the purity is &gt; 95% (by SDS-PAGE).</td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
<td>Polyclonal</td>
</tr>
<tr>
<td><strong>Isotype</strong></td>
<td>IgG</td>
</tr>
</tbody>
</table>

**Applications**

Our Abpromise guarantee covers the use of ab191523 in the following tested applications.

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

Tissue specificity

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.

Involvement in disease

Note=Activation of telomerase has been implicated in cell immortalization and cancer cell pathogenesis.
Defects in TERT are associated with susceptibility 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.

Sequence similarities

Belongs to the reverse transcriptase family. Telomerase subfamily. Contains 1 reverse transcriptase domain.

Domain

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 synthesis.
Post-translational modifications
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.

Cellular localization

Images

All lanes: Anti-Telomerase reverse transcriptase antibody (ab191523)
Lane 1: Jurkat whole cell lysates
Lane 2: Raw264.7 whole cell lysates
Lane 3: PC12 whole cell lysates
Predicted band size: 127 kDa

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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