

**Product Specification Sheet**

**Telomerase (Est2/Telomerase reverse transcriptase/TERT) Antibodies**

Cat. # EST23-P	Mouse Telomerase Control Peptide #3,	<b>SIZE:</b> 100 ug
Cat. # EST23-S	Rabbit Anti-Mouse Telomerase Antisera #3,	<b>SIZE:</b> 100 ul
Cat. # EST23-A	Rabbit Anti- Mouse Telomerase Ig G #3 (aff pure)	<b>SIZE:</b> 100 ug

The 3'ends of chromosomes are capped with telomere sequences (TTAGGG; 6-26 nucleotides in length) by ribonucleoprotein telomerase during DNA replication. Telomerase is an unusual RNA-dependent DNA polymerase that uses an RNA component to specify the addition of telomere. The telomeric RNA contains a sequence complementary to TTAGGG. In ciliated protozoa and yeast, telomere length is maintained by regulating the activity of telomerase. Many mammalian cells do not express telomerase resulting into shortening of telomere with each cell division, and ultimately causing the chromosomal instability, aging and cell death. Approx. 4.8 kb of telomeric DNA is lost with each cell division resulting into large number of chromosomal abnormalities. Most recently, introduction of telomerase into normal human cells has been shown to extend normal cell life by ~ 20 doubling.

Purification of telomerase from the ciliate also revealed two protein of 43 and 123 kDa. p123 is a homolog of yeast **Est2** (Essential for Telomerase activity). Mammalian homologs of yeast Est2 (also known as TP2 for Telomerase associated Protein 2; hEST2 or telomerase catalytic subunit or telomerase reverse transcriptase, TERT) have also been cloned (human Est2, 1132 aa; **mouse Est2** 1122 aa; ~127 kDa). hEST2 was localized in the nucleus. Yeast telomerase is 988 aa protein.

**Source of Antigen and Antibodies**

<b>Antigen</b>	15-aa peptide of mouse EST2 ; <b>Designated (EST23-P or control peptide). epitope location ~ Mid-region</b>
<b>Ab Host/type</b>	Rabbit, polyclonal Unpurified antiserum (cat #EST23-S) Aff pure IgG (cat #EST23-A) purified over antigen-agarose column
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control IgG</b>	<b># 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control</b>

**Form & Storage of Antibodies/Peptide Control**

**Antiserum (unpurified)**

100ul solution lyophilized powder  
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

**Affinity pure IgG**

100 ug/100ul solution lyophilized powder  
Supplied in **Buffer:** PBS+0.1% BSA  
**Reconstitute powder** in PBS at 1mg/ml

**Control/blocking peptide**

100 ug/100 ul solution lyophilized powder  
Supplied in Buffer: PBS pH 7.5,  
**Reconstitute powder in PBS at 1 mg/ml.**

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

**Long-term:** at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20oC or below.

**Shipping:** 4oC for solutions and room temp for powder

**Recommended Usage**

**Western Blotting** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using Chemiluminescence technique). An antibody made to Est23 epitope has been shown to recognize ~125 kDa protein in mouse FM3A and human immortal cell line 293 (2). Mouse TERT was also detected in testes, thymus, and spleen.

**ELISA:** Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

**Histochemistry & Immunofluorescence:** We recommend the use of affinity purified antibody at 1-20 ug/ml (2). Mouse Est2 has been localized in the cell nucleus (2).

**Specificity & Cross-reactivity**

The 15 AA mouse EST23-P control peptide sequence is 100% conserved in rat and human (1). No significant sequence homology is seen with yeast telomerase. We recommend the use of EST24 for the detection of yeast enzyme. Control peptide is recommended for antibody blocking studies to confirm specificity of antibodies. Actual cross-reactivity of antibodies in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at the web site):

**General References:**

Greenberg RA et al (1998) Oncogene in press; Meyerson M et al (1997) Cell 90, 785-795; Nugent CI et al (1998) Genes Develop. 12, 1073-85 (review), Martin-Rivera L et al (1998) PNAS 95, 10471-10474.

**Citations of ADI's antibodies for Telomerase/ Est's** (see updated list at the web site

\*This product is for In vitro research use only.

**Related material available from ADI**

Antibodies Est2, TRF1, TRF2, TP1/TLP1; Klohto, Survivin, p73, (EST23-S-A-P 71209A

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