

Product Specification Sheet

Telomerase (hEst2/TERT) Antibodies

Cat. # EST21-PhEst2/Telomerase Control Peptide	SIZE: 100 ug
Cat. # EST21-SRabbit Anti-hEst2/Telomerase Antisera #1,	SIZE: 100 ul
Cat. # EST21-ARabbit Anti-hEst2 Ig G # 1 (aff pure)	SIZE: 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.

Source of Antigen and Antibodies

Antigen	16-aa peptide of human EST2 ; Designated (EST21-P or control peptide). conjugated to KLH; epitope location ~ Mid-region
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat #EST21-S) Aff pure IgG (cat #EST21-A) purified over antigen-agarose column
2-ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

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). The antibody has detected ~120-130 kDa band from several tumor cell lines. An antibody made to a region near to the hEst21 epitope recognized ~125 kDa band in human and mouse tissues.

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: Not tested. We recommend the use of affinity purified antibody at 1-20 ug/ml in paraformaldehyde fixed sections of tissues (see published papers, 2)

Specificity & Cross-reactivity

The 16 AA human EST21 control peptide showed 62% sequence homology with the mouse Est2. No significant sequence homology is detected with any other protein. We recommend the use EST23 (antibody # 3) for detection of mouse Est2. 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: (1) Meyerson M et al (1997) Cell 90, 785- Greenberg RA et al (1998) Oncogene in press; Nugent CI et al (1998) Genes Develop. 12, 1073 (review), Martin-Rivera L et al (1998) 95, 10471-10476.

(2) Citations of ADI's antibodies for Telomerase/ Est's (see updates at the web site)

Xiang Hua et al (2000) BBRC 278, 503; Hiyama E (2003) Cancer Lett. 194, 221; Hiyama, E (2001) Neoplasia 3, 17; Zhang P (2003) FASEB J in press; Zhang T-C (2003) Carcinogenesis, 24: 1811; Ohshima K (2003) Leukemia and Lymphoma, 44, 1339

*This product is for In vitro research use only.

Est21-S-A-P

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