



Rabbit Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody

SL6582R

Product Name:	RNA polymerase II CTD repeat YSPTSPS (phospho S5)
Chinese Name:	磷酸化RNA聚合酶II CTD抗体
Alias:	p-Rpb1 CTD (Ser2/Ser5); DNA directed RNA polymerase II A; p-Rpb1 CTD(Ser2/Ser5); DNA-directed RNA polymerase II largest subunit; DNA-directed RNA polymerase II subunit A; DNA-directed RNA polymerase II subunit RPB1; DNA-directed RNA polymerase III largest subunit; Polr2a; RNA pol II CTD; RNA polymerase II subunit B1; RNA-directed RNA polymerase II subunit RPB1; RPB1; RPB1 HUMAN.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,Dog,Cow,Rabbit,
Applications:	WB=1:500-2000ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800Flow-Cyt=1ug/TestIF=1:100-500 (Paraffin sections need antigen repair) not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	240kDa
Cellular localization:	The nucleus
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated Synthesised phosphopeptide derived from human RNA polymerase II CTD repeat YSPTSPS around the phosphorylation site of phospho S5.:PT(p-S)PS
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of

	antibody the antibody is stable for at least two weeks at 2-4 °C.
PubMed:	PubMed
Product Detail:	<p>DNA-dependent RNA polymerase catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates as substrates. Largest and catalytic component of RNA polymerase II which synthesizes mRNA precursors and many functional non-coding RNAs. Forms the polymerase active center together with the second largest subunit. Pol II is the central component of the basal RNA polymerase II transcription machinery. It is composed of mobile elements that move relative to each other. RPB1 is part of the core element with the central large cleft, the clamp element that moves to open and close the cleft and the jaws that are thought to grab the incoming DNA template. At the start of transcription, a single stranded DNA template strand of the promoter is positioned within the central active site cleft of Pol II. A bridging helix emanates from RPB1 and crosses the cleft near the catalytic site and is thought to promote translocation of Pol II by acting as a ratchet that moves the RNA-DNA hybrid through the active site by switching from straight to bent conformations at each step of nucleotide addition. During transcription elongation, Pol II moves on the template as the transcript elongates. Elongation is influenced by the phosphorylation status of the C-terminal domain (CTD) of Pol II largest subunit (RPB1), which serves as a platform for assembly of factors that regulate transcription initiation, elongation, termination and mRNA processing. Acts as a RNA-dependent RNA polymerase when associated with small delta antigen of Hepatitis delta virus, acting both as a replicate and transcriptase for the viral RNA circular genome.</p> <p>Function: DNA-dependent RNA polymerase catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates as substrates. Largest and catalytic component of RNA polymerase II which synthesizes mRNA precursors and many functional non-coding RNAs. Forms the polymerase active center together with the second largest subunit. Pol II is the central component of the basal RNA polymerase II transcription machinery. It is composed of mobile elements that move relative to each other. RPB1 is part of the core element with the central large cleft, the clamp element that moves to open and close the cleft and the jaws that are thought to grab the incoming DNA template. At the start of transcription, a single stranded DNA template strand of the promoter is positioned within the central active site cleft of Pol II. A bridging helix emanates from RPB1 and crosses the cleft near the catalytic site and is thought to promote translocation of Pol II by acting as a ratchet that moves the RNA-DNA hybrid through the active site by switching from straight to bent conformations at each step of nucleotide addition. During transcription elongation, Pol II moves on the template as the transcript elongates. Elongation is influenced by the phosphorylation status of the C-terminal domain (CTD) of Pol II largest subunit (RPB1), which serves as a platform for assembly of factors that regulate transcription initiation, elongation, termination and mRNA processing. Acts as a RNA-dependent RNA polymerase when associated with small delta antigen of Hepatitis delta virus, acting both as a replicate and transcriptase for the viral RNA circular genome.</p> <p>Subunit:</p>

Component of the RNA polymerase II (Pol II) complex consisting of 12 subunits. The phosphorylated C-terminal domain interacts with FNBP3 and SYNCRIP. Interacts with SAFB/SAFB1. Interacts with CCNL1 and MYO1C (By similarity). Interacts with CCNL2 and SFRS19. Component of a complex which is at least composed of HTATSF1/Tat-SF1, the P-TEFb complex components CDK9 and CCNT1, RNA polymerase II, SUPT5H, and NCL/nucleolin. Interacts with PAF1. Interacts (via C-terminus) with FTSJD2, CTDSP1 and SCAF8. Interacts via the phosphorylated C-terminal domain with WDR82 and with SETD1A and SETD1B only in the presence of WDR82. Interacts with ATF7IP. When phosphorylated at 'Ser-5', interacts with MEN1; the unphosphorylated form, or phosphorylated at 'Ser-2' does not interact.

Subcellular Location:

Nucleus.

Post-translational modifications:

The tandem 7 residues repeats in the C-terminal domain (CTD) can be highly phosphorylated. The phosphorylation activates Pol II. Phosphorylation occurs mainly at residues 'Ser-2' and 'Ser-5' of the heptapeptide repeat and is mediated, at least, by CDK7 and CDK9. CDK7 phosphorylation of POLR2A associated with DNA promotes transcription initiation by triggering dissociation from DNA. The phosphorylation state is believed to result from the balanced action of site-specific CTD kinases and phosphatases, and a 'CTD code' that specifies the position of Pol II within the transcription cycle has been proposed.

Dephosphorylated by the protein phosphatase CTDSP1.

Ubiquitinated by WWP2 leading to proteasomal degradation (By similarity). [PTM]

Methylated at Arg-1810 by CARM1. Methylation occurs only when the CTD is hypophosphorylated, and phosphorylation at Ser-1805 and Ser-1808 prevent methylation (in vitro). It is assumed that methylation occurs prior to phosphorylation and transcription initiation. CTD methylation may facilitate the expression of select RNAs.

Similarity:

Belongs to the RNA polymerase beta' chain family.

SWISS:

P24928

Gene ID:

5430

Database links:

[Entrez Gene: 5430](#)Human

[Entrez Gene: 20020](#)Mouse

[Entrez Gene: 363633](#)Rat

[Oimim: 180660](#)Human

[SwissProt: P24928](#)Human

[SwissProt: P08775](#)Mouse

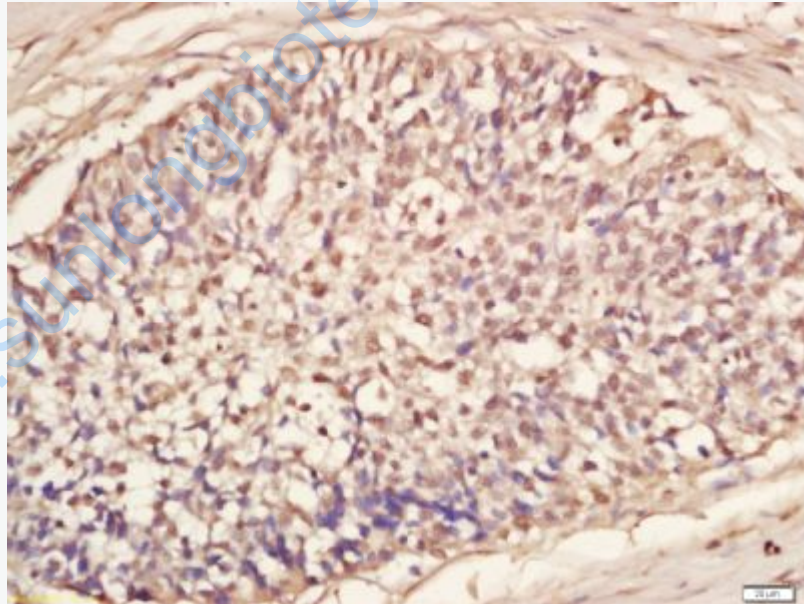
[Unigene: 270017](#)Human

[Unigene: 16533](#)Mouse

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

Picture:

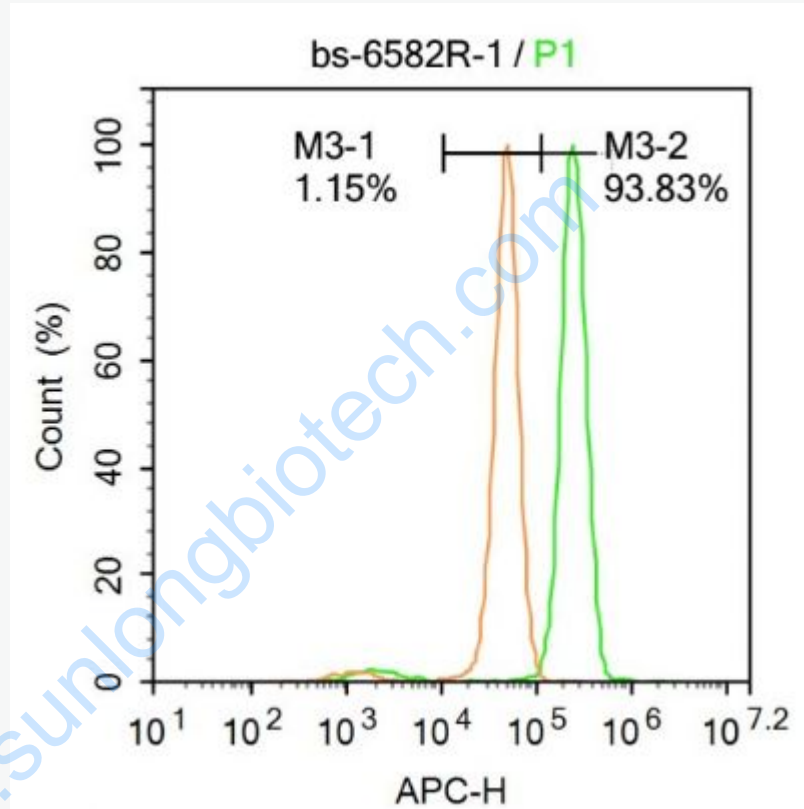


Tissue/cell: human laryngo carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;

Incubation: Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5)

Polyclonal Antibody, Unconjugated(SL6582R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Blank control: Hela.

Primary Antibody (green line): Rabbit Anti-RNA polymerase II CTD repeat YSPTSPS antibody (SL6582R)

Dilution: 1µg /10⁶ cells;

Isotype Control Antibody (orange line): Rabbit IgG .

Secondary Antibody: Goat anti-rabbit IgG-AF647

Dilution: 1µg /test.

Protocol

The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 90% ice-cold methanol for 20 min at room temperature. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at -20°C .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.