

**Anti-Rpb1 CTD (pS1619) Antibody**  
Rabbit polyclonal antibody to Rpb1 CTD (pS1619)  
Catalog # AP60040

## Specification

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### Anti-Rpb1 CTD (pS1619) Antibody - Product Information

Application	WB, IF
Primary Accession	<a href="#">P24928</a>
Other Accession	<a href="#">P08775</a>
Reactivity	Human, Mouse, Rat, Zebrafish, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	217176

### Anti-Rpb1 CTD (pS1619) Antibody - Additional Information

Gene ID 5430

#### Other Names

POLR2; DNA-directed RNA polymerase II subunit RPB1; RNA polymerase II subunit B1; DNA-directed RNA polymerase II subunit A; DNA-directed RNA polymerase III largest subunit; RNA-directed RNA polymerase II subunit RPB1

#### Target/Specificity

Recognizes endogenous levels of Rpb1 CTD (pS1619) protein.

#### Dilution

WB~~WB (1/500 - 1/1000), IH (1/100 - 1/200), IF/IC (1/100 - 1/500)  
IF~~WB (1/500 - 1/1000), IH (1/100 - 1/200), IF/IC (1/100 - 1/500)

#### Format

Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.

#### Storage

Store at -20 °C. Stable for 12 months from date of receipt

### Anti-Rpb1 CTD (pS1619) Antibody - Protein Information

Name POLR2A ([HGNC:9187](#))

Synonyms POLR2

#### Function

Catalytic core component of RNA polymerase II (Pol II), a DNA-dependent RNA polymerase which synthesizes mRNA precursors and many functional non-coding RNAs using the four ribonucleoside triphosphates as substrates (By similarity) (PubMed:<a href="http://www.uniprot.org/citations/23748380" target="\_blank">23748380</a>, PubMed:<a

[27193682](http://www.uniprot.org/citations/27193682), PubMed: [30190596](http://www.uniprot.org/citations/30190596), PubMed: [9852112](http://www.uniprot.org/citations/9852112)). Pol II-mediated transcription cycle proceeds through transcription initiation, transcription elongation and transcription termination stages. During transcription initiation, Pol II pre-initiation complex (PIC) is recruited to DNA promoters, with focused-type promoters containing either the initiator (Inr) element, or the TATA-box found in cell-type specific genes and dispersed-type promoters that often contain hypomethylated CpG islands usually found in housekeeping genes. Once the polymerase has escaped from the promoter it enters the elongation phase during which RNA is actively polymerized, based on complementarity with the template DNA strand. Transcription termination involves the release of the RNA transcript and polymerase from the DNA (By similarity) (PubMed: [23748380](http://www.uniprot.org/citations/23748380) [27193682](http://www.uniprot.org/citations/27193682), PubMed: [28108474](http://www.uniprot.org/citations/28108474) [30190596](http://www.uniprot.org/citations/30190596), PubMed: [9852112](http://www.uniprot.org/citations/9852112)). Forms Pol II active center together with the second largest subunit POLR2B/RPB2. Appends one nucleotide at a time to the 3' end of the nascent RNA, with POLR2A/RPB1 most likely contributing a Mg(2+)-coordinating DxDGD motif, and POLR2B/RPB2 participating in the coordination of a second Mg(2+) ion and providing lysine residues believed to facilitate Watson-Crick base pairing between the incoming nucleotide and template base. Typically, Mg(2+) ions direct a 5' nucleoside triphosphate to form a phosphodiester bond with the 3' hydroxyl of the preceding nucleotide of the nascent RNA, with the elimination of pyrophosphate. The reversible pyrophosphorolysis can occur at high pyrophosphate concentrations (By similarity) (PubMed: [30190596](http://www.uniprot.org/citations/30190596), PubMed: [8381534](http://www.uniprot.org/citations/8381534), PubMed: [9852112](http://www.uniprot.org/citations/9852112)). Can proofread the nascent RNA transcript by means of a 3' → 5' exonuclease activity. If a ribonucleotide is mis-incorporated, backtracks along the template DNA and cleaves the phosphodiester bond releasing the mis-incorporated 5'-ribonucleotide (By similarity) (PubMed: [8381534](http://www.uniprot.org/citations/8381534)). Through its unique C-terminal domain (CTD, 52 heptapeptide tandem repeats) serves as a platform for assembly of factors that regulate transcription initiation, elongation and termination. CTD phosphorylation on Ser-5 mediates Pol II promoter escape, whereas phosphorylation on Ser-2 is required for Pol II pause release during transcription elongation and further pre-mRNA processing. Additionally, the regulation of gene expression levels depends on the balance between methylation and acetylation levels of the CTD-lysines. Initiation or early elongation steps of transcription of growth-factor-induced immediate early genes are regulated by the acetylation status of the CTD. Methylation and dimethylation have a repressive effect on target genes expression. Cooperates with mRNA splicing machinery in co-transcriptional 5'-end capping and co-transcriptional splicing of pre-mRNA (By similarity) (PubMed: [24207025](http://www.uniprot.org/citations/24207025), PubMed: [26124092](http://www.uniprot.org/citations/26124092)).

### Cellular Location

Nucleus. Cytoplasm. Chromosome. Note=Hypophosphorylated form is mainly found in the cytoplasm, while the hyperphosphorylated and active form is nuclear (PubMed:26566685). Co-localizes with kinase SRPK2 and helicase DDX23 at chromatin loci where unscheduled R-loops form (PubMed:28076779).

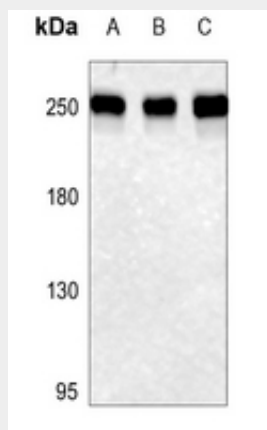
### Anti-Rpb1 CTD (pS1619) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

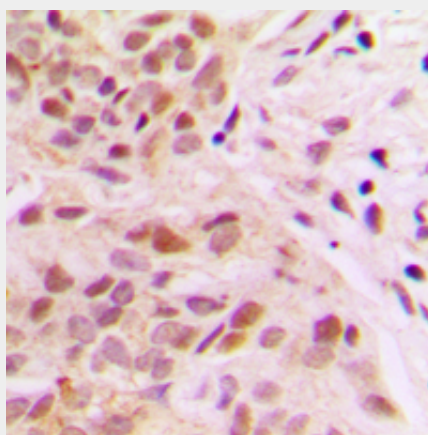
- [Western Blot](#)

- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

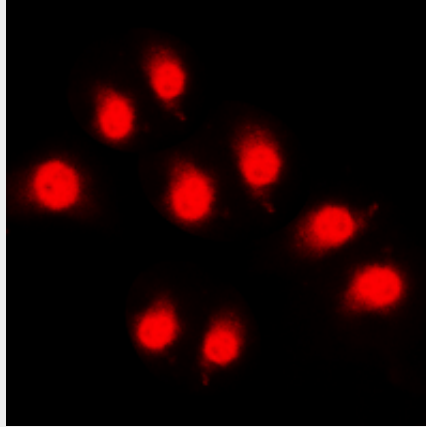
#### Anti-Rpb1 CTD (pS1619) Antibody - Images



Western blot analysis of Rpb1 CTD (pS1619) expression in A549 (A), U2OS (B), H1688 (C) whole cell lysates.



Immunohistochemical analysis of Rpb1 CTD (pS1619) staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of Rpb1 CTD (pS1619) staining in HeLa cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary antibody (red) in PBS at room temperature in the dark.

#### **Anti-Rpb1 CTD (pS1619) Antibody - Background**

KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human Rpb1 CTD (pS1619). The exact sequence is proprietary.