

# Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] ab76292

リコンビナント RabMAb

画像数 10

### 製品の概要

製品名	Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y]
製品の詳細	Rabbit monoclonal [EP1510Y] to RNA polymerase II CTD repeat YSPTSPS (phospho S5)
由来種	Rabbit
特異性	Detects RNA Polymerase II phosphorylated at serine 5.
アプリケーション	<b>適用あり:</b> WB, IHC-P, Dot blot, ICC/IF <b>適用なし:</b> Flow Cyt
種交差性	<b>交差種:</b> Mouse, Rat, Human
免疫原	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
ポジティブ・コントロール	WB: Human, Mouse, and Rat brain lysate. Dot Blot: RNA polymerase II CTD repeat YSPTSPS (phospho S5) peptide. IHC-P: Human colon, Human colon cancer, Mouse and Rat testis tissue. ICC/IF: HeLa cells.
特記事項	<p>This product has switched from a hybridoma to recombinant production method on 9th February 2024.</p> <p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"><li>- High batch-to-batch consistency and reproducibility</li><li>- Improved sensitivity and specificity</li><li>- Long-term security of supply</li><li>- Animal-free production</li></ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a>.</p>

### 製品の特性

製品の状態	Liquid
保存方法	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
バッファー	pH: 7.20

Preservative: 0.01% Sodium azide  
Constituents: 0.05% BSA, 40% Glycerol (glycerin, glycerine), 59% PBS

精製度 Protein A purified  
ポリ/モノ モノクローナル  
クローン名 EP1510Y  
アイソタイプ IgG

#### アプリケーション

**The Abpromise guarantee** Abpromise保証は、次のテスト済みアプリケーションにおけるab76292の使用に適用されます  
アプリケーションノートには、推奨の開始希釈率がありますが、適切な希釈率につきましてはご検討ください。

アプリケーション	Abreviews	特記事項
WB		1/10000. Predicted molecular weight: 217 kDa.
IHC-P		1/4000. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
Dot blot		1/1000.
ICC/IF		1/1000.

追加情報 Is unsuitable for Flow Cyt.

#### ターゲット情報

**機能** 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 an 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.

**配列類似性** Belongs to the RNA polymerase beta' chain family.

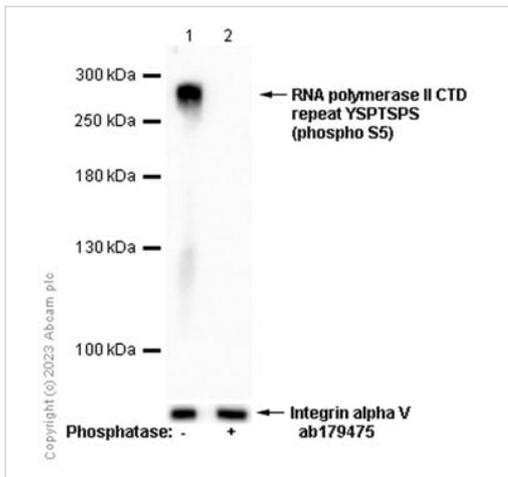
**ドメイン** The C-terminal domain (CTD) serves as a platform for assembly of factors that regulate transcription initiation, elongation, termination and mRNA processing.

The tandem heptapeptide 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. Phosphorylation also takes place at 'Ser-7' of the heptapeptide repeat, which is required for efficient transcription of snRNA genes and processing of the transcripts. 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. Among tandem heptapeptide repeats of the C-terminal domain (CTD) some do not match the Y-S-P-T-S-P-S consensus, the seventh serine residue 'Ser-7' being replaced by a lysine. 'Lys-7' in these non-consensus heptapeptide repeats can be alternatively acetylated, methylated and dimethylated. EP300 is one of the enzyme able to acetylate 'Lys-7'. Acetylation at 'Lys-7' of non-consensus heptapeptide repeats is associated with 'Ser-2' phosphorylation and active transcription. It may regulate initiation or early elongation steps of transcription specially for inducible genes.

Methylated at Arg-1810 prior to transcription initiation when the CTD is hypophosphorylated, phosphorylation at Ser-1805 and Ser-1808 preventing this methylation. Symmetrically or asymmetrically dimethylated at Arg-1810 by PRMT5 and CARM1 respectively. Symmetric or asymmetric dimethylation modulates interactions with CTD-binding proteins like SMN1/SMN2 and TDRD3. SMN1/SMN2 interacts preferentially with the symmetrically dimethylated form while TDRD3 interacts with the asymmetric form. Through the recruitment of SMN1/SMN2, symmetric dimethylation is required for resolving RNA-DNA hybrids created by RNA polymerase II, that form R-loop in transcription terminal regions, an important step in proper transcription termination. CTD dimethylation may also facilitate the expression of select RNAs. Among tandem heptapeptide repeats of the C-terminal domain (CTD) some do not match the Y-S-P-T-S-P-S consensus, the seventh serine residue 'Ser-7' being replaced by a lysine. 'Lys-7' in these non-consensus heptapeptide repeats can be alternatively acetylated, methylated and dimethylated. Methylation occurs in the earliest transcription stages and precedes or is concomitant to 'Ser-5' and 'Ser-7' phosphorylation.

Ubiquitinated by WWP2 leading to proteasomal degradation (By similarity). Following UV treatment, the elongating form of RNA polymerase II (RNA pol Ilo) is ubiquitinated UV damage sites without leading to degradation: ubiquitination is facilitated by KIAA1530/UVSSA and promotes RNA pol Ilo backtracking to allow access to the nucleotide excision repair machinery.

Nucleus.



Western blot - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

**All lanes** : Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292) at 1/10000 dilution

**Lane 1** : Human brain lysate

**Lane 2** : Human brain lysate, then the membrane treated with Alkaline Phosphatase for 1 hour

Lysates/proteins at 15 µg per lane.

#### Secondary

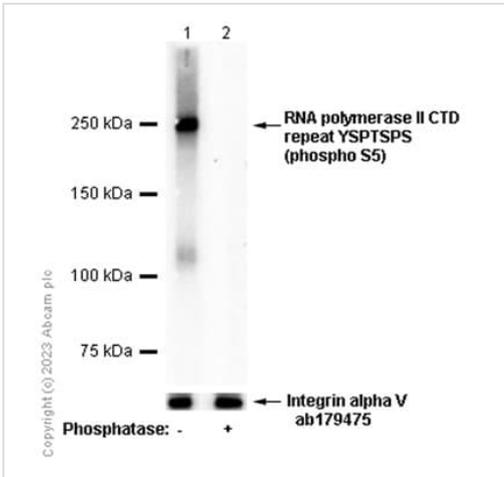
**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

**Predicted band size:** 217 kDa

**Observed band size:** 270 kDa

**Exposure time:** 40 seconds

Blocking and diluting buffer and concentration: 5% NFD/MTBST.



Western blot - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

**All lanes :** Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292) at 1/10000 dilution

**Lane 1 :** Mouse brain lysate

**Lane 2 :** Mouse brain lysate, then the membrane treated with Alkaline Phosphatase for 1 hour

Lysates/proteins at 15 µg per lane.

**Secondary**

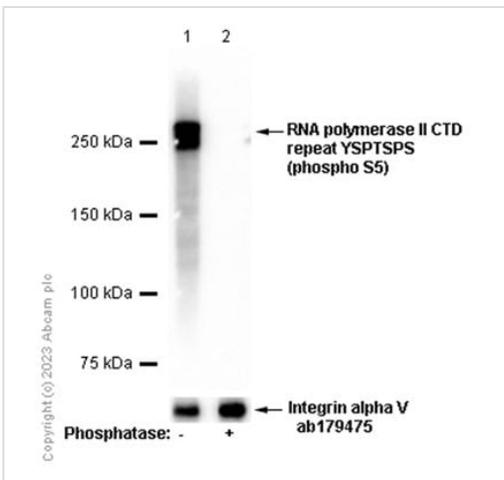
**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

**Predicted band size:** 217 kDa

**Observed band size:** 270 kDa

**Exposure time:** 60 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST.



Western blot - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

**All lanes :** Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292) at 1/10000 dilution

**Lane 1 :** Rat brain lysate

**Lane 2 :** Rat brain lysate, then the membrane treated with Alkaline Phosphatase for 1 hour

Lysates/proteins at 15 µg per lane.

**Secondary**

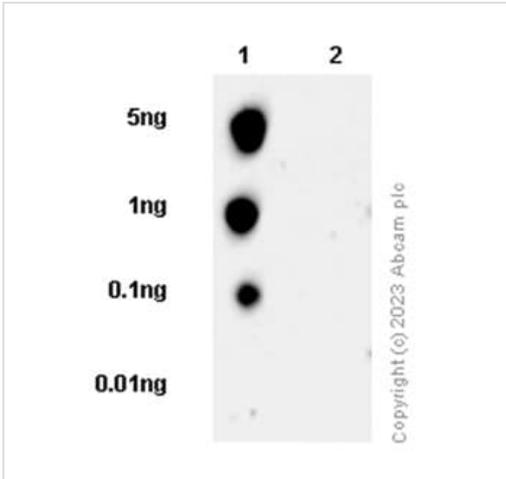
**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

**Predicted band size:** 217 kDa

**Observed band size:** 270 kDa

**Exposure time:** 20 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

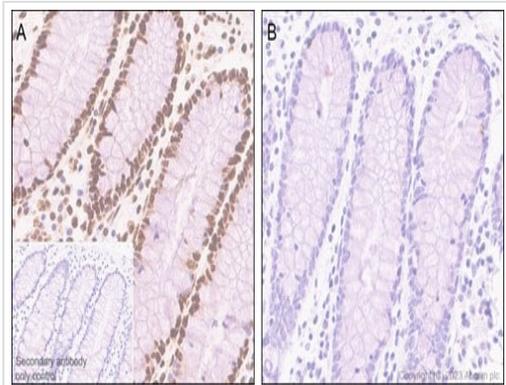


Dot Blot - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

Dot blot analysis of RNA polymerase II CTD repeat YSPTSPS (phospho S5) using ab76292 at 1/1000 dilution, followed by a Goat Anti-Rabbit IgG (H+L) Peroxidase conjugated ([ab97051](#)) at 1/2500 dilution. Blocking and dilution buffer: 5% NFDM/TBST. Exposure time: 180s.

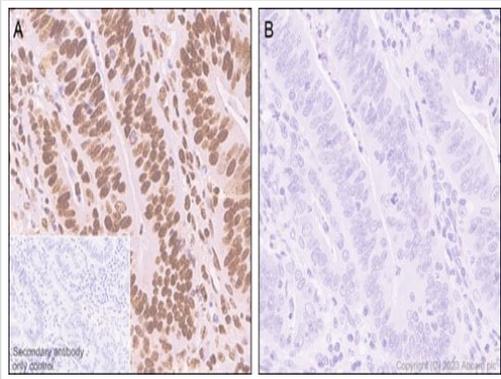
Lane 1: RNA polymerase II CTD repeat YSPTSPS (phospho S5) peptide

Lane 2: RNA polymerase II CTD repeat YSPTSPS non-phospho peptide



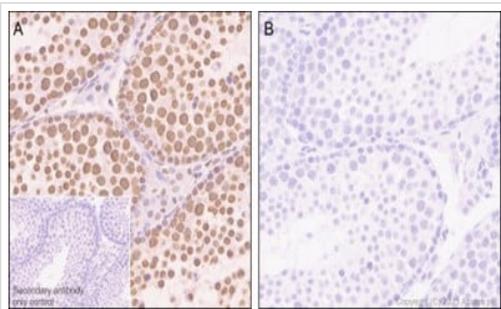
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling RNA polymerase II CTD repeat YSPTSPS with ab76292 at 1/4000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Nuclear staining on human colon without alkaline phosphatase treatment (image A). No signal was detected when tissues were treated with alkaline phosphatase (image B). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



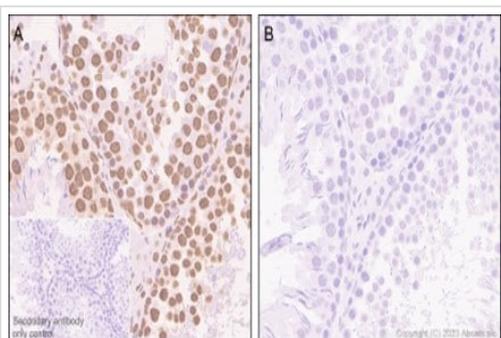
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

Immunohistochemical analysis of paraffin-embedded Human colon cancer tissue labeling RNA polymerase II CTD repeat YSPTSPS with ab76292 at 1/4000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Nuclear staining on human colon cancer without alkaline phosphatase treatment (image A). No signal was detected when tissues were treated with alkaline phosphatase (image B). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



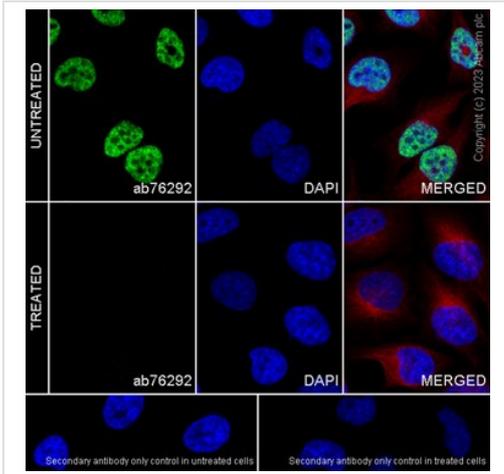
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labeling RNA polymerase II CTD repeat YSPTSPS with ab76292 at 1/4000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Nuclear staining on mouse testis without alkaline phosphatase treatment (image A). No signal was detected when tissues were treated with alkaline phosphatase (image B). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

Immunohistochemical analysis of paraffin-embedded Rat testis tissue labeling RNA polymerase II CTD repeat YSPTSPS with ab76292 at 1/4000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Nuclear staining on rat testis without alkaline phosphatase treatment (image A). No signal was detected when tissues were treated with alkaline phosphatase (image B). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa cells labelling RNA polymerase II CTD repeat YSPTSPS with ab76292 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed (**ab150081**) at 1/1000 dilution. Alexa Fluor® 594 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (**ab195889**) was used to counterstain tubulin at 1/200 dilution. The nuclear counterstain was DAPI (Blue).

Immunocytochemistry/ Immunofluorescence - Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

Why choose a recombinant antibody?

**Research with confidence**  
Consistent and reproducible results

**Long-term and scalable supply**  
Recombinant technology

**Success from the first experiment**  
Confirmed specificity

**Ethical standards compliant**  
Animal-free production

Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody [EP1510Y] (ab76292)

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

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