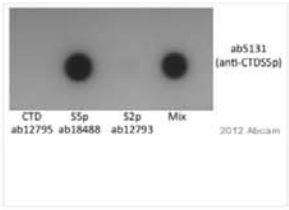
Human RNA polymerase II CTD repeat YSPTSPS (phospho S5) peptide (ab18488)

★★★★☆ Abreviews (4) Q&A (1) Specific References (4) Datasheet



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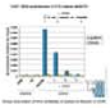

Recombinant human RNA polymerase II CTD repeat YSPTSPS protein (ab81888)
★★★★☆ 1 review
Applications: SDS-PAGE

Anti-RNA polymerase II CTD repeat YSPTSPS antibody - ChIP Grade (ab26721)
★★★★☆ 11 reviews
References (11)
Applications: ChIP, ICC/IF, IHC-P, IP, WB
Species: Mouse, Human, Pig, Schizosaccharomyces pombe

Recombinant Human RNA polymerase II CTD repeat YSPTSPS protein (ab81834)
Applications: SDS-PAGE

RNA polymerase II CTD Panel (RNA pol II CTD, phospho S2, phospho S5) (ab103968)
References (3)

Datasheet | Specific References (4) | Protocols

Customer reviews and FAQs

Overview

Product name	Human RNA polymerase II CTD repeat YSPTSPS (phospho S5) peptide See all RNA polymerase II CTD repeat YSPTSPS proteins and peptides

Description

Nature	Synthetic
Amino Acid Sequence	
Accession	P24928
Species	Human
Modifications	phospho S5

Associated products

Coimmunogen	› Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody (ab140748) › Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody - ChIP Grade (ab5131)
Corresponding Antibody	› Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody - ChIP Grade (ab5131)

Specifications

Our Abpromise guarantee covers the use of **ab18488** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Western blot Blocking - Blocking peptide for Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody - ChIP Grade (ab5131)
Form	Liquid
Additional notes	

Product code ab18488

Size	Price
100 µg	$299

Order now and get it on Tuesday October 24, 2017

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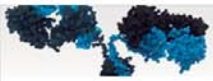


PROTEINS

Highly purified native and recombinant human IgE, IgA, IgD, IgM, IgG and Fc fragments

Product

ABPROMISE
Guaranteed product quality, expert customer support

GUARANTEED

Additional notes	This peptide is 2 repeats of the YSPTSPS repeated motif found at the C-terminal of RNA polymerase II. *- First try to dissolve a small amount of peptide in either water or buffer. The more charged residues on a peptide, the more soluble it is in aqueous solutions.* *- If the peptide doesn't dissolve try an organic solvent e.g. DMSO, then dilute using water or buffer.* *- Consider that any solvent used must be compatible with your assay. If a peptide does not dissolve and you need to recover it, lyophilise to remove the solvent.* *- Gentle warming and sonication can effectively aid peptide solubilisation. If the solution is cloudy or has gelled the peptide may be in suspension rather than solubilised.* *- Peptides containing cysteine are easily oxidised, so should be prepared in solution just prior to use.*
Concentration	100 µg at 1 mg/ml

Preparation and Storage

Stability and Storage	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles. Information available upon request.

General Info

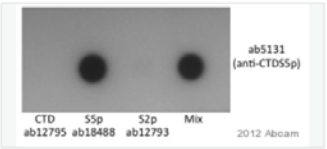
Alternative names	DNA directed RNA polymerase II A DNA-directed RNA polymerase II largest subunit RNA polymerase II 220 kd subunit DNA-directed RNA polymerase II subunit A **see all**
Function	DNA-dependent RNA polymerase catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates 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 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.
Sequence similarities	Belongs to the RNA polymerase beta' chain family.
Domain	The C-terminal domain (CTD) serves as a platform for assembly of factors that regulate transcription initiation, elongation, termination and mRNA processing.
Post-translational modifications	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 IIo) is ubiquitinated UV damage sites without leading to degradation: ubiquitination is facilitated by KIAA1530/UVSSA and promotes RNA pol IIo backtracking to allow access to the nucleotide excision repair machinery.

Cellular localization	Nucleus.

▼ Information by UniProt

Human RNA polymerase II CTD repeat YSPTSPS (phospho S5) peptide images



Dot Blot - RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5 (ab18488)
This image is courtesy of an anonymous Abreview

Dot blot analysis of ab18488 - RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5.

0.1 µg peptide was spotted onto the membrane and blocked with 2% BSA for 1 hour at room temperature, before detection with ab5131 at 1/3000 dilution.

See Abreview

References for Human RNA polymerase II CTD repeat YSPTSPS (phospho S5) peptide (ab18488)

This product has been referenced in:

- Berletch JB *et al.* Escape from X inactivation varies in mouse tissues. *PLoS Genet* **11**:e1005079 (2015). Read more (PubMed: 25785854) »
- Chan EA *et al.* Peripheral subnuclear positioning suppresses Tcrb recombination and segregates Tcrb alleles from RAG2. *Proc Natl Acad Sci U S A* **110**:E4628-37 (2013). Read more (PubMed: 24218622) »

See all 4 Publications for this product

Publishing research using **ab18488**? Please let us know so that we can cite the reference in this datasheet.

Product Wall

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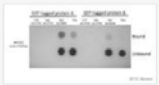
Other (In vitro binding assay) Abreview for RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5

★★★★☆ Good

Application Other



Review text: This peptide was mixed with GST tagged recombinant proteins in vitro in binding buffer for 1 hour at room temp. Glutathione coated magnetic beads were then mixed into the buffer and removed after another hour incubation. The GST tagged recombinant proteins and any bound peptide was eluted by incubating with free glutathione. Eluted proteins were analyzed by western blot and peptides analyzed by dotblot.

This experiment was conducted with ab12793, ab12795 and an unrelated non-Abcam peptide as a negative control.
Sample: Human Recombinant protein

Primary antibody (in addition to 'RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5')

Primary antibody: Abcam primary antibody: Anti-RNA polymerase II CTD repeat YSPTSPS (phospho S5) antibody - ChIP Grade (ab5131)

Dilution: 1/3000

Secondary antibody

Name: Non-Abcam antibody was used: anti-rabbit

Host species: Goat

Clonality: Polyclonal

Conjugation: Horse Radish Peroxidase

Dilution: 1/20000

James Thorne
Verified customer
Submitted Aug 13 2012

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Other (In vitro pulldown assay) Abreview for RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5

★★★★☆ Good

Application Other

Review text: This peptide was used in an in vitro pulldown assay. It was biotinylated and linked to streptavidin coated magnetic beads. This complex was then mixed with our proteins of interest under a variety of conditions. Proteins which bound to the CTD-S5p peptide were eluted and assessed by western blot.

This peptide was used along side ab12793, ab12795, and an unrelated non-abcam peptide and binding to each CTD was compared.

Sample: Human Recombinant protein

Primary antibody (in addition to 'RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5')

Primary antibody: None used

Secondary antibody

Secondary antibody: None used

Abcam user community
Verified customer
Submitted Aug 07 2012

0

Western blot Abreview for RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5

★★★★☆ Good

Application Western blot

Review text: We used this peptide as a positive control for ab5131 (anti S5p-CTD)

Sample: Human Recombinant protein (ab18488)

Loading amount: 0.25 µg

Specification: ab18488

Gel Running Conditions: Reduced Denaturing (16% tris-tricine (Schagger et al 2006))

Blocking step: BSA as blocking agent for 1 hour(s) and 0 minute(s) · Concentration: 2% · Temperature: 23°C

Other product details

Incubation time: 1 hour(s) and 0 minute(s) · Temperature: 23° C

Primary antibody (in addition to 'RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5')

Primary antibody: Abcam primary antibody: Anti-RNA

polymerase II CTD repeat YSPTSPS (phospho S5) antibody - ChIP Grade (ab5131)

Secondary antibody

Name: Non-Abcam antibody was used: anti-rabbit

Host species: Goat

Clonality: Polyclonal

Conjugation: Horse Radish Peroxidase

Dilution: 1/20000

Detection

Detection method: west pico

Exposure: 30 second(s)

Bands: Specific: 1.4 kDa

Positive control: recombinant protein

Additional data

Abcam response: Thank you for submitting your Abreview. While you have been able to detect the 1.4 kDa band, we would not typically recommend this peptide for use as a WB positive control because it is very difficult to successfully run and transfer peptides of this size. The peptide is commonly used for blocking purposes.

Abcam user community
Verified customer
Submitted Aug 01 2012

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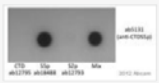
Other (Dot Blot) Abreview for RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5

★★★★☆ Good

Application Other



Review text: This peptide was used for dot blots to quality control anti-CTD antibodies. It was detected by ab5131 but not with anti-S2-CTD antibody.

Sample: Human Recombinant protein

Primary antibody (in addition to 'RNA polymerase II CTD repeat YSPTSPS peptide - phospho S5')

Dilution: 1/3000

Secondary antibody

Name: Non-Abcam antibody was used: anti-rabbit

Host species: Goat

Clonality: Polyclonal

Conjugation: Horse Radish Peroxidase

Dilution: 1/20000

Additional data

Notes: membranes were dotted with 0.1ug of peptide and blocked with 2% bsa at r/t for 1hr prior to primary antibody incubation

Abcam user community
Verified customer
Submitted May 25 2012

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Q

I would like to know the information of ab18488, ab12795 and ab12793 (peptides) which I received recently. These are the synthetic peptides, so I would like to know the purity and the chemical form of them. Please provide the detail information of them.

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Read More

Abcam community
Verified customer
Asked on Dec 06 2005

A

Thank you for your enquiry. ab18488 was synthesised as >90 purity by HPLC analysis, although by weight they will contain salts and buffer components. They are supplied as a solution in the buffer stated on the datasheet.

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ab18488 was synthesised as ...

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Abcam Scientific Support
Answered on Dec 07 2005

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