RNA pol II CTD Ser2ph / Ser5ph antibody (mAb)

Catalog Nos: 61665, 61666
RRID: AB_2793726
Clone: 1A12G10
Isotype: IgG1, k
Application(s): ChIP, ChIP-Seq, ICC, IF, WB
Reactivity: Human

Quantities: 100 µg, 10 µg
Purification: Protein A Chromatography
Host: Mouse
Concentration: 1 µg/µl
Molecular Weight: 240 kDa

Background: RNA pol II (RNA polymerase II) is responsible for synthesizing messenger RNA in eukaryotes. RNA pol II contains a carboxy terminal domain composed of heptapeptide repeats that are essential for polymerase activity. These repeats contain serine and threonine residues that are phosphorylated in actively transcribing RNA polymerase. In addition, RNA pol II, in combination with several other polymerase subunits, form the DNA binding domain of the polymerase, a groove in which the DNA template is transcribed into RNA.

During the transcription cycle, the CTD of the large subunit of RNA pol II is reversibly phosphorylated. RNA pol II containing unphosphorylated CTD is recruited to the promoter, whereas the hyperphosphorylated CTD form is involved in active transcription. Phosphorylation occurs at two sites within the heptapeptide repeat, at serine 2, serine 5 and serine 7. RNA pol II Serine 2 phosphorylation is enriched over the gene body and is associated with transcriptional elongation. RNA pol II Serine 5 phosphorylation is confined to promoter regions and is necessary for the initiation of transcription.

Immunogen: This antibody was raised against a synthetic peptide containing phospho-serine 2 and phospho-serine 5 of the CTD of human RNA Polymerase II.

Buffer: Purified IgG in PBS with 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic.

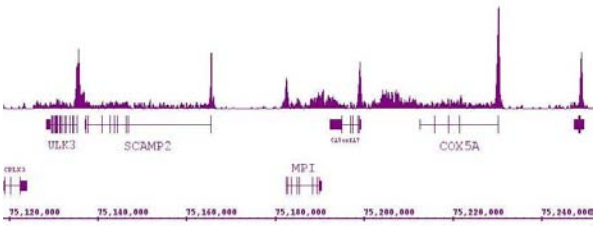
Application Notes:
Applications Validated by Active Motif:
ChIP: 5 - 10 µg per ChIP
ChIP-Seq: 5 - 10 µg each
ICC/IF: 5 µg/ml dilution
WB*: 0.5 - 2 µl/ml dilution

ChIP-Seq validation was performed by Active Motif's Epigenetics Services; the complete data set is available in the UCSC Genome Browser by clicking here.

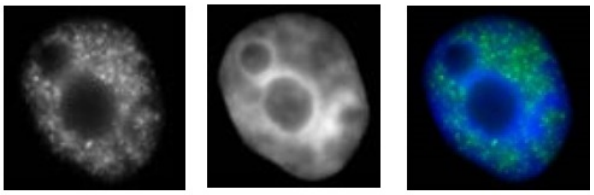
*Note: many chromatin-bound proteins are not soluble in a low salt nuclear extract and fractionate to the pellet. Therefore, we recommend a High Salt / Sonication Protocol when preparing nuclear extracts for Western Blot.

Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product is guaranteed for 12 months from date of receipt.

This product is for research use only and is not for use in diagnostic procedures.



RNA pol II CTD Ser2ph / Ser5ph antibody (mAb) (Clone 1A12G10) tested by ChIP-Seq.
ChIP was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with 30 µg of chromatin from HL-60 cells and 4 µg of antibody. ChIP DNA was sequenced on the Illumina HiSeq and 11 million sequence tags were mapped to identify RNA pol II CTD Ser2ph / Ser5ph binding sites. The image shows binding across a region of chromosome 15. You can view the complete data set in the UCSC Genome Browser, starting at this specific location, here.



RNA pol II CTD Ser2ph / Ser5ph antibody (mAb) (Clone 1A12G10) tested by immunofluorescence.
Left: HeLa cell stained with RNA pol II CTD Ser2ph / Ser5ph antibody (mAb). Middle:Hoechst. Right: Merge.

RNA pol II CTD Ser2ph / Ser5ph antibody (mAb) (Clone 1A12G10) tested by Western blot.
HeLa nuclear extract (30 µg per lane) probed with RNA pol II CTD Ser2ph / Ser5ph antibody (mAb) at a 1 µg/ml dilution.