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Product Information

Monoclonal Anti-phospho-RNA polymerase II CTD (pSer^2), Clone 3E7C7
produced in rat, purified immunoglobulin

Catalog Number **SAB4200637**

Product Description

Monoclonal Anti-phospho-RNA polymerase II CTD (pSer^2) (rat IgG2a isotype) is derived from the hybridoma 3E7C7 produced by the fusion of mouse myeloma cells and lymph node cells from rat immunized with a synthetic peptide containing phospho-Ser^2 of human RNA Polymerase II CTD repeat (GeneID: 5430).[1] The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-RNA polymerase II CTD (pSer^2) recognizes specifically phospho-Ser^2 RNAPII but not phosphor-Ser^5 or phosphor-Ser^7.[1] This specificity is found in human, monkey, canine, rat and mouse and in a wide variety of tissues. The product may be used in several immunochemical techniques including immunoblotting (~250 kDa), immunofluorescence and Flow cytometry.

RNAPII also known as POLR2A is the largest subunit of RNA polymerase II, the polymerase responsible for synthesizing messenger RNA in eukaryotes. This polymerase contains a carboxy terminal domain (CTD) 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. The CTD functions to help couple transcription and processing of the nascent RNA and also plays roles in transcription elongation and termination. In addition, this subunit, in combination with several other polymerase subunits, forms the DNA binding domain of the polymerase, a groove in which the DNA template is transcribed into RNA.[1-2] CTD is being dynamically modified during transcription cycle. The phosphorylation on Ser^2 is regulated by CDK9, FUS and BRD4, thus orchestrating CTD phosphorylation during RNAPII transcription.[1,3-4]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at –20 ^{0}C in working aliquots. Repeated freezing and thawing or storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.25-0.5 µg/mL is recommended using whole extracts of HeLa cells.

Immunofluorescence: a working concentration of 4-8 µg/mL is recommended using A549 cells.

Flow Cytometry: a working dilution of 10µg/test is recommended using HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Odawara, J., et al., *BMC Genomics*, **12**, 516 (2011).
2. Hsin, J.P., and Manley, J.L., *Genes Dev.,* **26**, 2119-2137 (2012).
3. Schwartz, J.C., et al., *Genes Dev.,* **15**, 2690-2695 (2012).
4. Devaiah, B.N., et al., *Proc. Natl. Acad. Sci. USA*, **109**, 6927-6932 (2012).

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