SANTA CRUZ BIOTECHNOLOGY, INC.

p-Pol II (8A7): sc-13583

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

RNA polymerase II (Pol II) is a multi-subunit enzyme responsible for the transcription of protein-coding genes. Transcription initiation requires recruitment of the complete transcription machinery to a promoter via solicitation by activators and chromatin remodeling factors. Pol II can coordinate 10 to 14 subunits. This complex interacts with the promoter regions of genes and a variety of elements and transcription factors. The DNA binding domain of the polymerase is a groove where TFIIB orients the DNA for unwinding and transcription.

REFERENCES

1. Bushnell, D.A., et al. 2004. Structural basis of transcription: an RNA polymerase II-TFIIB cocrystal at 4.5 Angstroms. Science 303: 983-988.
2. Palangat, M., et al. 2004. Downstream DNA selectively affects a paused conformation of human RNA polymerase II. J. Mol. Biol. 341: 429-442.

CHROMOSOMAL LOCATION

Genetic locus: POLR2A (human) mapping to 17p13.1; Polr2a (mouse) mapping to 11 B3.

SOURCE

p-Pol II (8A7) is a mouse monoclonal antibody raised against a synthetic peptide containing Ser 1801 phosphorylated Pol II of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13583 X, 200 µg/0.1 ml.

APPLICATIONS

p-Pol II (8A7) is recommended for detection of Ser 1801 phosphorylated RNA polymerase II of human origin and correspondingly phosphorylated RNA polymerase II of mouse, rat and *S. cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Pol II siRNA (h): sc-36290, Pol II siRNA (m): sc-36291, Pol II shRNA Plasmid (h): sc-36290-SH, Pol II shRNA Plasmid (m): sc-36291-SH, Pol II shRNA (h) Lentiviral Particles: sc-36290-V and Pol II shRNA (m) Lentiviral Particles: sc-36291-V.

p-Pol II (8A7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

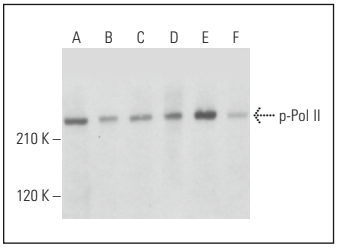
Molecular Weight of p-Pol II: 220 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, NAMALWA cell lysate: sc-2234 or HeLa whole cell lysate: sc-2200.

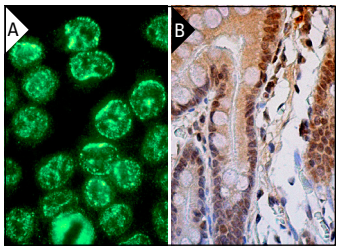
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



p-Pol II (8A7): sc-13583. Western blot analysis of Pol II phosorylation in HeLa (**A**), Jurkat (**B**), NAMALWA (**C**), RAW 264.7 (**D**), NIH/3T3 (**E**) and PC-12 (**F**) whole cell lysates.



p-Pol II (8A7): sc-13583. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Sawado, T., et al. 2003. The β-globin locus control region (LCR) functions primarily by enhancing the transition from transcription initiation to elongation. Genes Dev. 17: 1009-1018.
2. Saavalainen, K. and Tammi, M.I. 2007. Integration of the activation of the human hyaluronan synthase 2 gene promoter by common cofactors of the transcription factors retinoic acid receptor and nuclear factor κB. J. Biol. Chem. 282: 11530-11539.
3. Degenhardt, T., et al. 2009. Population-level transcription cycles derive from stochastic timing of single-cell transcription. Cell 138: 489-501.
4. Matilainen, J.M., et al. 2010. The number of vitamin D receptor binding sites defines the different vitamin D responsiveness of the CYP24 gene in malignant and normal mammary cells. J. Biol. Chem. 285: 24174-24183.
5. Kraeussling, M., et al. 2011. Highly asynchronous and asymmetric cleavage divisions accompany early transcriptional activity in pre-blastula medaka embryos. PLoS ONE 6: e21741.
6. Darvekar, S., et al. 2012. Identification of two independent nucleosome-binding domains in the transcriptional co-activator SPBP. Biochem. J. 442: 65-75.
7. Massip, A., et al. 2013. E2F1 activates p53 transcription through its distal site and participates in apoptosis induction in HPV-positive cells. FEBS Lett. 587: 3188-3194.
8. Shults, C.L., et al. 2015. Aging and loss of circulating 17β-estradiol alters the alternative splicing of ERβ in the female rat brain. Endocrinology 156: 4187-4199.

RESEARCH USE

For research use only, not for use in diagnostic procedures.