

Pol II (N-20): sc-899

BACKGROUND

RNA polymerase II (Pol II) is an enzyme that is composed of twelve subunits and is responsible for the transcription of protein-coding genes. Transcription initiation requires Pol II-mediated recruitment of transcription machinery to a target promoter, thereby allowing transcription to begin. The largest subunit of Pol II (referred to as RPB1 or RPB205) is a 1,840 amino acid protein that contains one C₂H₂-type zinc finger and a C-terminal domain comprised of several heptapeptide repeats. Although Pol II function requires the cooperation of all twelve subunits, the largest subunit conveys Pol II catalytic activity and, together with the second largest subunit, forms the active center of the Pol II enzyme. Additionally, the large subunit participates in forming the DNA-binding domain of Pol II, a groove that is necessary for transcription of the DNA template. Without proper function of the large subunit, mRNA synthesis and subsequent transcription elongation cannot occur.

CHROMOSOMAL LOCATION

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

SOURCE

Pol II (N-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of Pol II of mouse origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-899 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for ChIP application, sc-899 X, 200 µg/0.1 ml.

APPLICATIONS

Pol II (N-20) is recommended for detection of Pol II of mouse, rat and human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Pol II (N-20) is also recommended for detection of Pol II in additional species, including equine, canine, bovine and porcine.

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.

Pol II (N-20) X TransCruz antibody is recommended for ChIP assays.

Molecular Weight (predicted) of Pol II: 217 kDa.

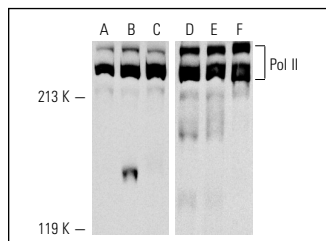
Molecular Weight (observed) of Pol II: 192-253 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, A-673 nuclear extract: sc-2128 or U-2 OS cell lysate: sc-2295.

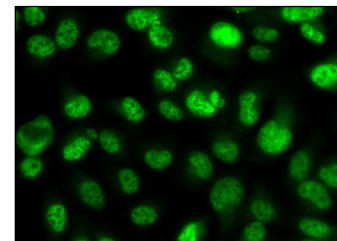
STORAGE

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

DATA



Western blot analysis of Pol II expression in A-431 (A,D), AT-3 (B,E) and A-673 (C,F) nuclear extracts. Antibodies tested include Pol II (C-21): sc-900 (A-C) and Pol II (N-20): sc-899 (D-F).



Pol II (N-20): sc-899. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School.

SELECT PRODUCT CITATIONS

- Kobayashi, M., et al. 1999. Identification of a photoreceptor cell-specific nuclear receptor. *Proc. Natl. Acad. Sci. USA* 96: 4814-4819.
- Kula, A., et al. 2013. HIV-1 pre-mRNA commitment to Rev mediated export through PSF and Matrin 3. *Virology* 435: 329-340.
- Vijayalingam, S., et al. 2013. Adenovirus L-E1A activates transcription through mediator complex-dependent recruitment of the super elongation complex. *J. Virol.* 87: 3425-3434.
- Carvalho, S., et al. 2013. Histone methyltransferase SETD2 coordinates FACT recruitment with nucleosome dynamics during transcription. *Nucleic Acids Res.* 41: 2881-2893.
- Zaade, D., et al. 2013. Distinct signal transduction pathways downstream of the (P)RR revealed by microarray and ChIP-chip analyses. *PLoS ONE* 8: e57674.
- Lanzino, M., et al. 2013. DAX-1, as an androgen-target gene, inhibits aromatase expression: a novel mechanism blocking estrogen-dependent breast cancer cell proliferation. *Cell Death Dis.* 4: e724.
- Peng, Y.C., et al. 2014. Human cytomegalovirus pUL79 is an elongation factor of RNA polymerase II for viral gene transcription. *PLoS pathog.* 10: e1004350.

RESEARCH USE

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



Try **Pol II (CTD4H8): sc-47701** or **Pol II (F-12): sc-55492**, our highly recommended monoclonal alternatives to Pol II (N-20). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Pol II (CTD4H8): sc-47701**.