

# Pol II (1.BB.61): sc-71917

## 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 C<sub>2</sub>H<sub>2</sub>-type zinc finger and a C-terminal domain comprised of several heptapeptide repeats. Although Pol II function requires the cooperation of all 12 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.

## REFERENCES

- Bushnell, D.A., et al. 2004. Structural basis of transcription: an RNA polymerase II-TFIIB cocrystal at 4.5 Angstroms. *Science* 303: 983-988.
- 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

Pol II (1.BB.61) is a mouse monoclonal antibody raised against purified RNA polymerase II of wheat germ origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Pol II (1.BB.61) is recommended for detection of the highly conserved heptapeptide repeat of the largest subunit of eukaryotic Pol II of mouse, rat, human, *Xenopus laevis*, *Caenorhabditis elegans*, yeast, wheat germ and bovine 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)] and immunofluorescence (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.

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

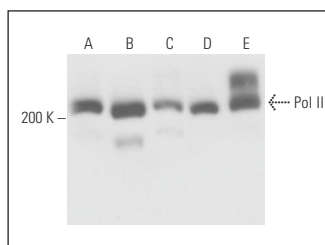
Molecular Weight (observed) of Pol II: 192-253 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, A-673 nuclear extract: sc-2128 or HeLa nuclear extract: sc-2120.

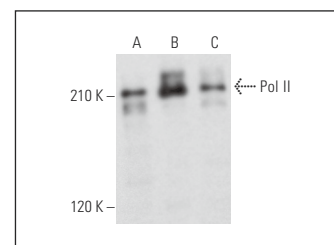
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Pol II (1.BB.61): sc-71917. Western blot analysis of Pol II expression in A-431 (A), A-673 (B), HeLa (C) and NIH/3T3 (D) nuclear extracts and HeLa whole cell lysate (E).



Pol II (1.BB.61): sc-71917. Western blot analysis of Pol II expression in HCT-116 (A), HT-1080 (B) and NIH/3T3 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Li, X., et al. 2018. Perfluorooctanoic acid stimulates ovarian cancer cell migration, invasion via ERK/NFκB/MMP-2/-9 pathway. *Toxicol. Lett.* 294: 44-50.
- Gong, D., et al. 2019. Inhibition of histone deacetylase 11 promotes human liver cancer cell apoptosis. *Am. J. Transl. Res.* 11: 983-990.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **Pol II (CTD4H8): sc-47701** for Pol II antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.