

POLR2G (G-9): sc-393890

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. POLR2G (DNA-directed RNA polymerase II subunit G), also known as RPB7, hRPB19 or hsRPB7, is the seventh largest subunit of RNA polymerase II. It is required for the transcription initiation phase of Pol II. POLR2G forms a subcomplex with the RPB4 subunit. This subcomplex protrudes from the Pol II core complex and, in the closed conformation, functions to prevent double stranded DNA from entering the active site.

REFERENCES

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2. Bushnell, D.A., et al. 2004. Structural basis of transcription: an RNA polymerase II-TFIIB cocrystal at 4.5 angstroms. *Science* 303: 983-988.
3. Palangat, M., et al. 2004. Downstream DNA selectively affects a paused conformation of human RNA polymerase II. *J. Mol. Biol.* 341: 429-442.
4. Zhong, S., et al. 2004. Epidermal growth factor enhances cellular TATA binding protein levels and induces RNA polymerase I- and III-dependent gene activity. *Mol. Cell. Biol.* 24: 5119-5129.
5. Hirsch, H.A., et al. 2004. Distinct mechanisms for repression of RNA polymerase III transcription by the retinoblastoma tumor suppressor protein. *Mol. Cell. Biol.* 24: 5989-5999.
6. Cabart, P., et al. 2004. BRCA1 cooperates with NUFIP and P-TEFβ to activate transcription by RNA polymerase II. *Oncogene* 23: 5316-5329.
7. Meka, H., et al. 2005. Crystal structure and RNA binding of the Rpb4/Rpb7 subunits of human RNA polymerase II. *Nucleic Acids Res.* 33: 6435-6444.
8. Ujvári, A. and Luse, D.S. 2006. RNA emerging from the active site of RNA polymerase II interacts with the Rpb7 subunit. *Nat. Struct. Mol. Biol.* 13: 49-54.

CHROMOSOMAL LOCATION

Genetic locus: POLR2G (human) mapping to 11q12.3; Polr2g (mouse) mapping to 19 A.

SOURCE

POLR2G (G-9) is a mouse monoclonal antibody raised against amino acids 1-172 representing full length POLR2G of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

POLR2G (G-9) is recommended for detection of POLR2G of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

POLR2G (G-9) is also recommended for detection of POLR2G in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for POLR2G siRNA (h): sc-96905, POLR2G siRNA (m): sc-77405, POLR2G shRNA Plasmid (h): sc-96905-SH, POLR2G shRNA Plasmid (m): sc-77405-SH, POLR2G shRNA (h) Lentiviral Particles: sc-96905-V and POLR2G shRNA (m) Lentiviral Particles: sc-77405-V.

Molecular Weight of POLR2G: 19 kDa.

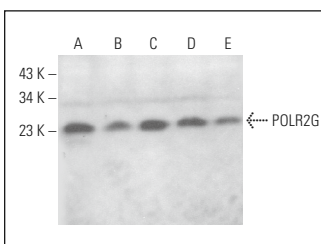
Positive Controls: Jurkat whole cell lysate: sc-2204, A-431 whole cell lysate: sc-2201 or NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SUPPORT REAGENTS

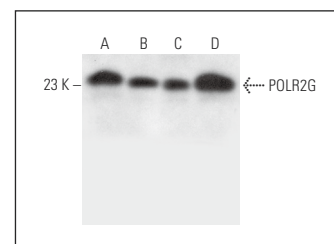
To ensure optimal results, the following support reagents are recommended:

- 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



POLR2G (G-9): sc-393890. Western blot analysis of POLR2G expression in NIH/3T3 (A), T-47D (B), IMR-32 (C), HeLa (D) and C6 (E) whole cell lysates.



POLR2G (G-9): sc-393890. Western blot analysis of POLR2G expression in HT-1080 (A), NIH/3T3 (B), A-431 (C) and Jurkat (D) whole cell lysates.

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.