

POLR2G (C-2): sc-398213

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

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602013. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
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. Cabart, P., et al. 2004. BRCA1 cooperates with NUFIP and P-TEFb to activate transcription by RNA polymerase II. *Oncogene* 23: 5316-5329.
5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

POLR2G (C-2) is a mouse monoclonal antibody raised against amino acids 1-172 representing full length POLR2G of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

POLR2G (C-2) is available conjugated to agarose (sc-398213 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398213 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398213 PE), fluorescein (sc-398213 FITC), Alexa Fluor® 488 (sc-398213 AF488), Alexa Fluor® 546 (sc-398213 AF546), Alexa Fluor® 594 (sc-398213 AF594) or Alexa Fluor® 647 (sc-398213 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398213 AF680) or Alexa Fluor® 790 (sc-398213 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

POLR2G (C-2) 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).

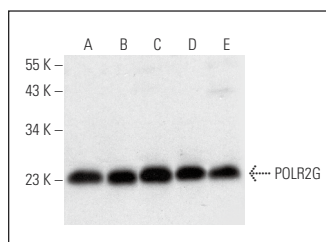
POLR2G (C-2) is also recommended for detection of POLR2G in additional species, including equine, canine, bovine and porcine.

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.

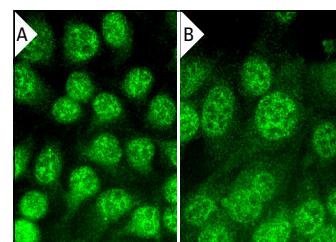
Molecular Weight of POLR2G: 19 kDa.

Positive Controls: HT-1080 whole cell lysate: sc-364183, A-431 whole cell lysate: sc-2201 or Jurkat whole cell lysate: sc-2204.

DATA



POLR2G (C-2): sc-398213. Western blot analysis of expression in HT-1080 (A), A-431 (B), Jurkat (C), T98G (D) and NIH/3T3 (E) whole cell lysates.



POLR2G (C-2): sc-398213. Immunofluorescence staining of methanol-fixed HeLa cells (A) and NIH/3T3 cells (B) showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Chirackal Manavalan, A.P., et al. 2019. CDK12 controls G₁/S progression by regulating RNAPII processivity at core DNA replication genes. *EMBO Rep.* 20: e47592.
2. Wang, H., et al. 2022. The transcriptional coactivator RUVBL2 regulates Pol II clustering with diverse transcription factors. *Nat. Commun.* 13: 5703.
3. Li, Y., et al. 2022. Targeted protein degradation reveals RNA Pol II heterogeneity and functional diversity. *Mol. Cell* 82: 3943-3959.e11.

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 for detailed protocols and support products.