

POLR1E (C-11): sc-398270

BACKGROUND

RNA polymerase I (Pol I) is a multi-subunit complex responsible for catalyzing the transcription of DNA into RNA, specifically via the synthesis of ribosomal RNA precursors. POLR1E (polymerase (RNA) I polypeptide E), also known as PAF53 or PRAF1, is a 481 amino acid protein that localizes to the nucleolus and belongs to the eukaryotic RPA49/POLR1E RNA polymerase subunit family. Existing as a component of the Pol I complex, POLR1E functions as a DNA-dependent RNA polymerase that uses the four ribonucleoside triphosphates as substrates to catalyze the transcription of DNA into RNA. The gene encoding POLR1E maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome. Hereditary hemorrhagic telangiectasia, which is characterized by harmful vascular defects, and familial dysautonomia, are both associated with chromosome 9. Notably, chromosome 9 encompasses the largest interferon family gene cluster.

REFERENCES

- Seither, P., et al. 1997. Constitutive and strong association of PAF53 with RNA polymerase I. *Chromosoma* 106: 216-225.
- Voit, R. and Grummt, I. 2001. Phosphorylation of UBF at serine 388 is required for interaction with RNA polymerase I and activation of rDNA transcription. *Proc. Natl. Acad. Sci. USA* 98: 13631-13636.
- Yamamoto, K., et al. 2004. Multiple protein-protein interactions by RNA polymerase I-associated factor PAF49 and role of PAF49 in rRNA transcription. *Mol. Cell. Biol.* 24: 6338-6349.
- Bjerregaard, B., et al. 2004. Regulation of ribosomal RNA synthesis during the final phases of porcine oocyte growth. *Biol. Reprod.* 70: 925-935.
- Percipalle, P., et al. 2006. The chromatin remodelling complex WSTF-SNF2h interacts with nuclear myosin 1 and has a role in RNA polymerase I transcription. *EMBO Rep.* 7: 525-530.

CHROMOSOMAL LOCATION

Genetic locus: POLR1E (human) mapping to 9p13.2; Polr1e (mouse) mapping to 4 B1.

SOURCE

POLR1E (C-11) is a mouse monoclonal antibody raised against amino acids 8-113 mapping near the N-terminus of POLR1E 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-398270 X, 200 µg/0.1 ml.

POLR1E (C-11) is available conjugated to agarose (sc-398270 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398270 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398270 PE), fluorescein (sc-398270 FITC), Alexa Fluor® 488 (sc-398270 AF488), Alexa Fluor® 546 (sc-398270 AF546), Alexa Fluor® 594 (sc-398270 AF594) or Alexa Fluor® 647 (sc-398270 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398270 AF680) or Alexa Fluor® 790 (sc-398270 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

POLR1E (C-11) is recommended for detection of POLR1E 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).

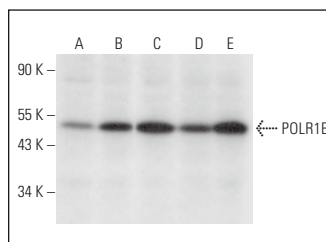
Suitable for use as control antibody for POLR1E siRNA (h): sc-92929, POLR1E siRNA (m): sc-152370, POLR1E shRNA Plasmid (h): sc-92929-SH, POLR1E shRNA Plasmid (m): sc-152370-SH, POLR1E shRNA (h) Lentiviral Particles: sc-92929-V and POLR1E shRNA (m) Lentiviral Particles: sc-152370-V.

POLR1E (C-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

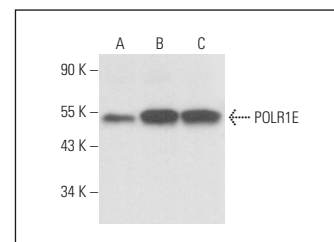
Molecular Weight of POLR1E: 54 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or HeLa nuclear extract: sc-2120.

DATA



POLR1E (C-11): sc-398270. Western blot analysis of POLR1E expression in JAR (A), HeLa (B), K-562 (C) and Jurkat (D) whole cell lysates and HeLa nuclear extract (E).



POLR1E (C-11): sc-398270. Western blot analysis of POLR1E expression in F9 (A), 3T3-L1 (B) and NIH/3T3 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Edvardson, S., et al. 2017. Heterozygous *de novo* UBTF gain-of-function variant is associated with neurodegeneration in childhood. *Am. J. Hum. Genet.* 101: 267-273.
- Daniel, L., et al. 2018. Mechanistic insights in transcription-coupled nucleotide excision repair of ribosomal DNA. *Proc. Natl. Acad. Sci. USA* 115: E6770-E6779.

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.

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