

POLR1E (E-14): sc-107947

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

1. Seither, P., Zatzepina, O., Hoffmann, M. and Grummt, I. 1997. Constitutive and strong association of PAF53 with RNA polymerase I. *Chromosoma* 106: 216-225.
2. 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.
3. Bjerregaard, B., Wrenzycki, C., Philimonenko, V.V., Hozak, P., Laurincik, J., Niemann, H., Motlik, J. and Maddox-Hyttel, P. 2004. Regulation of ribosomal RNA synthesis during the final phases of porcine oocyte growth. *Biol. Reprod.* 70: 925-935.
4. Yamamoto, K., Yamamoto, M., Hanada, K., Nogi, Y., Matsuyama, T. and Muramatsu, M. 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.
5. Percipalle, P., Fomproix, N., Cavellán, E., Voit, R., Reimer, G., Krüger, T., Thyberg, J., Scheer, U., Grummt, I. and Farrants, A.K. 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.
6. Panov, K.I., Panova, T.B., Gadal, O., Nishiyama, K., Saito, T., Russell, J. and Zomerdijk, J.C. 2006. RNA polymerase I-specific subunit CAST/hPAF49 has a role in the activation of transcription by upstream binding factor. *Mol. Cell. Biol.* 26: 5436-5448.

CHROMOSOMAL LOCATION

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

SOURCE

POLR1E (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of POLR1E of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107947 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-107947 X, 200 µg/0.1 ml.

APPLICATIONS

POLR1E (E-14) is recommended for detection of POLR1E of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

POLR1E (E-14) is also recommended for detection of POLR1E in additional species, including equine, canine, bovine, porcine and avian.

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 (E-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of POLR1E: 54 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.