SANTA CRUZ BIOTECHNOLOGY, INC.

Pol I/II/III RPB8 (N-12): sc-32122

BACKGROUND

Eukaryotes produce three distinct classes of RNA polymerase, Pol I, II and III. Each polymerase is responsible for the synthesis of a different class of RNA. RNA polymerase I (Pol I) transcribes the rRNA (ribosomal RNA) genes for the precursor of the 28S, 18S and 5.8S molecules of the ribosome. RNA polymerase II (Pol II) transcribes protein-encoding genes into mRNA (messenger RNA) and snRNA (small nuclear RNA) genes into snRNAs that influence the processing of other classes of RNA. RNA polymerase III (Pol III) transcribes the 5S rRNA genes and all of the tRNA (transfer RNA) genes. Each class of RNA polymerase is assembled from 9 to 15 different polypeptides. The RPB6 and RPB8 subunits are shared by all three RNA polymerases.

REFERENCES

1. Bushnell, D.A., et al. 2004. Structural basis of transcription: an RNA polymerase II-TFIIB cocrystal at 4.5 Angstroms. Science 303: 983-988.
2. Palangat, M., et al. 2004. Downstream DNA selectively affects a paused conformation of human RNA polymerase II. J. Mol. Biol. 341: 429-442.
3. 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.
4. 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.
5. White, R.J. 2004. RNA polymerase III transcription and cancer. Oncogene 23: 3208-3216.
6. Cabart, P., et al. 2004. BRCA1 cooperates with NUFIP and P-TEFb to activate transcription by RNA polymerase II. Oncogene 23: 5316-5329.
7. Svejstrup, J.Q. 2004. The RNA polymerase II transcription cycle: cycling through chromatin. Biochim. Biophys. Acta 1677: 64-73.
8. Cramer, P. 2004. Structure and function of RNA polymerase II. Adv. Protein Chem. 67: 1-42.
9. Comai, L. 2004. Mechanism of RNA polymerase I transcription. Adv. Protein Chem. 67: 123-155.

CHROMOSOMAL LOCATION

Genetic locus: POLR2H (human) mapping to 3q27.1; Polr2h (mouse) mapping to 16 B1.

SOURCE

Pol I/II/III RPB8 (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Pol I/II/III RPB8 of human origin.

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-32122 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Pol I/II/III RPB8 (N-12) is recommended for detection of Pol I/II/III RPB8 of mouse, rat and human 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)], 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).

Pol I/II/III RPB8 (N-12) is also recommended for detection of Pol I/II/III RPB8 in additional species, including avian.

Suitable for use as control antibody for Pol I/II/III RPB8 siRNA (h): sc-45866, Pol I/II/III RPB8 siRNA (m): sc-45867, Pol I/II/III RPB8 shRNA Plasmid (h): sc-45866-SH, Pol I/II/III RPB8 shRNA Plasmid (m): sc-45867-SH, Pol I/II/III RPB8 shRNA (h) Lentiviral Particles: sc-45866-V and Pol I/II/III RPB8 shRNA (m) Lentiviral Particles: sc-45867-V.

Molecular Weight of Pol I/II/III RPB8: 17 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

SELECT PRODUCT CITATIONS

1. Akhrymuk, I., et al. 2012. Evasion of the innate immune response: the old world αvirus nsP2 protein induces rapid degradation of Rpb1, a catalytic subunit of RNA polymerase II. J. Virol. 86: 7180-7191.

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.