

Pol I/II/III RPB8 (B8-1): sc-21752

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 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.

CHROMOSOMAL LOCATION

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

SOURCE

Pol I/II/III RPB8 (B8-1) is a mouse monoclonal antibody raised against recombinant human RPB8, shared subunit of polymerase I, II and III.

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.

APPLICATIONS

Pol I/II/III RPB8 (B8-1) is recommended for detection of RNA polymerase I/II/III subunit 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

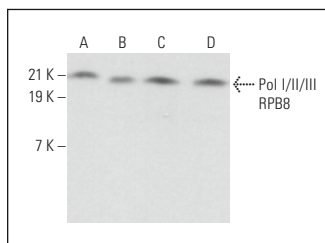
Molecular Weight of Pol I/II/III: 17 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, T-47D cell lysate: sc-2293 or TK-1 whole cell lysate: sc-364798.

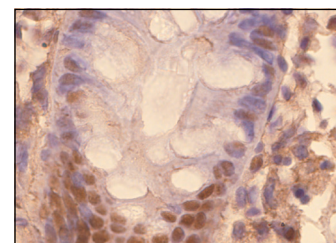
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Pol I/II/III RPB8 (B8-1): sc-21752. Western blot analysis of Pol I/II/III RPB8 expression in Jurkat (A), T-47D (B) and TK-1 (C) whole cell lysates and HeLa nuclear extract (D).



Pol I/II/III RPB8 (B8-1): sc-21752. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Coulouarn, C., et al. 2005. Genome-wide response of the human Hep3B hepatoma cell to proinflammatory cytokines, from transcription to translation. *Hepatology* 42: 946-955.
2. Miao, B.P., et al. 2018. Histone acetyltransferase 1 up regulates Bcl2L12 expression in nasopharyngeal cancer cells. *Arch. Biochem. Biophys.* 646: 72-79.
3. Sreenivasan, K., et al. 2020. Attenuated epigenetic suppression of muscle stem cell necroptosis is required for efficient regeneration of dystrophic muscles. *Cell Rep.* 31: 107652.
4. Luo, H., et al. 2024. ARMC5 controls the degradation of most Pol II subunits, and ARMC5 mutation increases neural tube defect risks in mice and humans. *Genome Biol.* 25: 19.

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.