SANTA CRUZ BIOTECHNOLOGY, INC.

POLR2B (E-12): sc-166803

The Power to Question

BACKGROUND

RNA polymerase II (Pol II) is a multi-subunit complex responsible for catalyzing the transcription of DNA into RNA. POLR2B (polymerase (RNA) II (DNA directed) polypeptide B), also known as RPB2 (RNA polymerase II subunit B2), is a 1,174 amino acid protein that is the second largest subunit in the Pol II complex. POLR2B, along with the other Pol II subunits, uses the four ribonucleoside triphosphates as substrates to catalyze the transcription of DNA to RNA. Localized to the nucleus, POLR2B is one of at least three subunits that form a structure which is essential in maintaining contact between the active site of Pol II and the DNA template/newly synthesized RNA. In addition to POLR2B, this complex contains the central large cleft, a clamp element that opens and closes the cleft and functions to grab the incoming DNA template.

REFERENCES

1. Näär, A.M., et al. 2002. Human CRSP interacts with RNA polymerase II CTD and adopts a specific CTD-bound conformation. Genes Dev. 16: 1339-1344.
2. Langelier, M.F., et al. 2005. The highly conserved glutamic acid 791 of RPB2 is involved in the binding of NTP and Mg(B) in the active center of human RNA polymerase II. Nucleic Acids Res. 33: 2629-2639.
3. Frøslev, T.G., et al. 2005. Lower level relationships in the mushroom genus *Cortinarius* (Basidiomycota, Agaricales): a comparison of RPB1, RPB2, and ITS phylogenies. Mol. Phylogenet. Evol. 37: 602-618.

CHROMOSOMAL LOCATION

Genetic locus: POLR2B (human) mapping to 4q12; Polr2b (mouse) mapping to 5 C3.3.

SOURCE

POLR2B (E-12) is a mouse monoclonal antibody raised against amino acids 184-384 mapping near the N-terminus of POLR2B 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-166803 X, 200 µg/0.1 ml.

POLR2B (E-12) is available conjugated to agarose (sc-166803 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166803 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166803 PE), fluorescein (sc-166803 FITC), Alexa Fluor® 488 (sc-166803 AF488), Alexa Fluor® 546 (sc-166803 AF546), Alexa Fluor® 594 (sc-166803 AF594) or Alexa Fluor® 647 (sc-166803 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166803 AF680) or Alexa Fluor® 790 (sc-166803 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

POLR2B (E-12) is recommended for detection of POLR2B 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). POLR2B (E-12) is also recommended for detection of POLR2B in additional species, including equine, canine, bovine, porcine and avian.

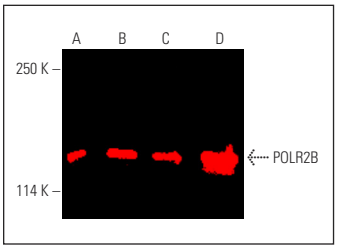
Suitable for use as control antibody for POLR2B siRNA (h): sc-62962, POLR2B siRNA (m): sc-62963, POLR2B shRNA Plasmid (h): sc-62962-SH, POLR2B shRNA Plasmid (m): sc-62963-SH, POLR2B shRNA (h) Lentiviral Particles: sc-62962-V and POLR2B shRNA (m) Lentiviral Particles: sc-62963-V.

POLR2B (E-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

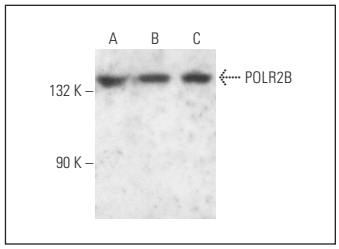
Molecular Weight of POLR2B: 134 kDa.

Positive Controls: Sol8 nuclear extract: sc-2157, Ramos nuclear extract: sc-2153 or HeLa nuclear extract: sc-2120.

DATA



POLR2B (E-12): sc-166803. Near-Infrared western blot analysis of POLR2B expression in HeLa (**A**), IMR-32 (**B**), Ramos (**C**) and Jurkat (**D**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 790: sc-542740.



POLR2B (E-12): sc-166803. Western blot analysis of POLR2B expression in HeLa (**A**), Jurkat (**B**) and Sol8 (**C**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Noe Gonzalez, M., et al. 2018. CTD-dependent and -independent mechanisms govern co-transcriptional capping of Pol II transcripts. Nat. Commun. 9: 3392.
2. Duncan-Lewis, C., et al. 2021. Cytoplasmic mRNA decay represses RNA polymerase II transcription during early apoptosis. Elife 10: e58342.
3. Li, Y., et al. 2022. Targeted protein degradation reveals RNA Pol II heterogeneity and functional diversity. Mol. Cell 82: 3943-3959.e11.
4. Li, Y., et al. 2023. RNA Pol II preferentially regulates ribosomal protein expression by trapping disassociated subunits. Mol. Cell 83: 1280-1297.e11.

RESEARCH USE

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