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Anti-POLR3B Antibody

Catalog # AP60759

Product Information

Application	WB, IHC
Primary Accession	Q9NW08
Reactivity	Human, Mouse, Rat, Rabbit, Zebrafish, Pig, Bovine, Dog, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	127785

Additional Information

Gene ID	55703
Other Names	DNA-directed RNA polymerase III subunit RPC2; RNA polymerase III subunit C2; C128; DNA-directed RNA polymerase III 127.6 kDa polypeptide; DNA-directed RNA polymerase III subunit B
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human POLR3B. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000), IHC (1/100 - 1/200) IHC~~WB (1/500 - 1/1000), IHC (1/100 - 1/200)
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

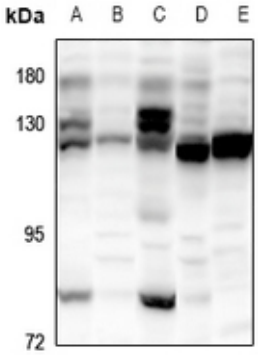
Protein Information

Name	POLR3B (HGNC:30348)
Function	Catalytic core component of RNA polymerase III (Pol III), a DNA-dependent RNA polymerase which synthesizes small non-coding RNAs using the four ribonucleoside triphosphates as substrates. Synthesizes 5S rRNA, snRNAs, tRNAs and miRNAs from at least 500 distinct genomic loci (PubMed:20413673, PubMed:33558766). Pol III-mediated transcription cycle proceeds through transcription initiation, transcription elongation and transcription termination stages. During transcription initiation, Pol III is recruited to DNA promoters type I, II or III with the help of general transcription factors and other specific initiation factors. Once the polymerase has escaped from the promoter it enters the elongation phase during which RNA is actively polymerized, based on complementarity with the template DNA strand. Transcription termination involves the release of the RNA transcript and polymerase from the DNA (PubMed:20413673, PubMed:33335104, PubMed:33558764,

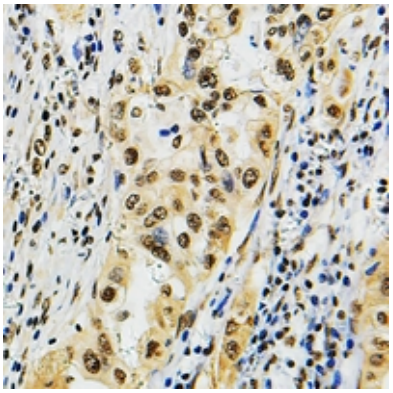
PubMed:33558766, PubMed:33674783, PubMed:34675218). Forms Pol III active center together with the largest subunit POLR3A/RPC1. A single-stranded DNA template strand of the promoter is positioned within the central active site cleft of Pol III. Appends one nucleotide at a time to the 3' end of the nascent RNA, with POLR3A/RPC1 contributing a Mg(2+)-coordinating DxDGD motif, and POLR3B/RPC2 participating in the coordination of a second Mg(2+) ion and providing lysine residues believed to facilitate Watson-Crick base pairing between the incoming nucleotide and template base. Typically, Mg(2+) ions direct a 5' nucleoside triphosphate to form a phosphodiester bond with the 3' hydroxyl of the preceding nucleotide of the nascent RNA, with the elimination of pyrophosphate (PubMed:19609254, PubMed:20413673, PubMed:33335104, PubMed:33558764, PubMed:33674783, PubMed:34675218). Pol III plays a key role in sensing and limiting infection by intracellular bacteria and DNA viruses. Acts as a nuclear and cytosolic DNA sensor involved in innate immune response. Can sense non-self dsDNA that serves as template for transcription into dsRNA. The non-self RNA polymerase III transcripts, such as Epstein-Barr virus-encoded RNAs (EBERs) induce type I interferon and NF-kappa-B through the RIG-I pathway.

Cellular Location Nucleus. Cytoplasm, cytosol

Images



Western blot analysis of POLR3B expression in K562 (A), U87MG (B), HEK293T (C), CT26 (D), H9C2 (E) whole cell lysates. (Predicted band size: 127 kD; Observed band size: 128 kD)



Immunohistochemical analysis of POLR3B staining in human lung cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

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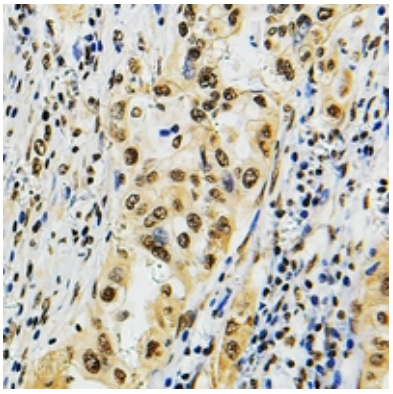

haematoxylin and mounted with DPX.