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# POLR3G Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP16982b

## Product Information

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| **Application** | WB, E |
| **Primary Accession** | O15318 |
| **Other Accession** | NP_006458.2 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Clone Names** | RB36682 |
| **Calculated MW** | 25914 |
| **Antigen Region** | 195-223 |

## Additional Information

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| **Gene ID** | 10622 |
| **Other Names** | DNA-directed RNA polymerase III subunit RPC7, RNA polymerase III subunit C7, DNA-directed RNA polymerase III subunit G, RNA polymerase III 32 kDa subunit, RPC32, POLR3G |
| **Target/Specificity** | This POLR3G antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 195-223 amino acids from the C-terminal region of human POLR3G. |
| **Dilution** | WB~~1:1000 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | POLR3G Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | POLR3G ( HGNC:30075) |
| **Function** | DNA-dependent RNA polymerase catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates as substrates |

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| | (PubMed:20413673, PubMed:33558764, PubMed:34675218, PubMed:35637192). Specific peripheric component of RNA polymerase III (Pol III) which synthesizes small non-coding RNAs including 5S rRNA, snRNAs, tRNAs and miRNAs from at least 500 distinct genomic loci (PubMed:20154270, PubMed:20413673, PubMed:35637192). Acts as a long tether that bridges POLR3C/RPC3-POLR3F/RPC6-POLR3G/RPC7 heterotrimer and the mobile stalk of Pol III, coordinating the dynamics of Pol III stalk and clamp modules during the transition from apo to elongation state. Pol III exists as two alternative complexes defined by the mutually exclusive incorporation of subunit POLR3G/RPC7alpha or POLR3GL/RPC7beta. POLR3G/RPC7alpha modulates Pol III transcriptome by specifically enhancing the transcription of snaR-A non-coding RNAs. At resting state, occupies the active site of apo Pol III and keeps Pol III in an autoinhibitory mode, preventing non-specific transcription (PubMed:33558764, PubMed:33558766, PubMed:35637192). 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 (PubMed:19609254, PubMed:19631370). |
| **Cellular Location** | Nucleus. Cytoplasm {ECO:0000250\|UniProtKB:Q6NXY9}. Note=Excluded from nucleoli (PubMed:21898682). In zygotes and the 2-cell stage embryos, mainly in the cytoplasm. Starts to localize to the nucleus in the 8-16 cell stage embryo and early blastocysts (By similarity) {ECO:0000250\|UniProtKB:Q6NXY9, ECO:0000269\|PubMed:21898682} |
| **Tissue Location** | Barely detectable in differentiated tissues. Expressed in embryonic stem cells and in other dividing cells, such as some tumor cell lines. |

## Background

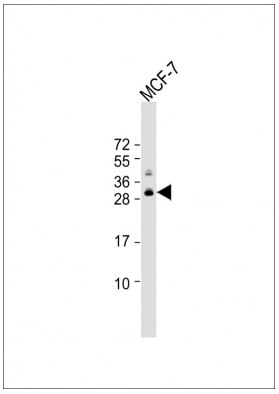
DNA-dependent RNA polymerase catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates as substrates. Specific peripheric component of RNA polymerase III which synthesizes small RNAs, such as 5S rRNA and tRNAs. May direct with other members of the RPC3/POLR3C-RPC6/POLR3F-RPC7/POLR3G subcomplex RNA Pol III binding to the TFIIIB-DNA complex via the interactions between TFIIIB and POLR3F. May be involved either in the recruitment and stabilization of the subcomplex within RNA polymerase III, or in stimulating catalytic functions of other subunits during initiation. Plays a key role in sensing and limiting infection by intracellular bacteria and DNA viruses. Acts as 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.

## References

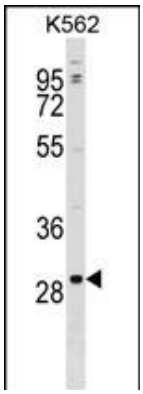
Ablasser, A., et al. Nat. Immunol. 10(10):1065-1072(2009)
Chiu, Y.H., et al. Cell 138(3):576-591(2009)
Oh, J.H., et al. Mamm. Genome 16(12):942-954(2005)
Hu, P., et al. Mol. Cell. Biol. 22(22):8044-8055(2002)
Wang, Z., et al. Genes Dev. 11(10):1315-1326(1997)

## Images

Anti-POLR3G Antibody (C-term) at 1:1000 dilution +




MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 26 kDa Blocking/Dilution buffer: 5% NFDM/TBST.




POLR3G Antibody (C-term) (Cat. #AP16982b) western blot analysis in K562 cell line lysates (35ug/lane).This demonstrates the POLR3G antibody detected the POLR3G protein (arrow).