

#12825 Store at -20C

**POLR3A (D5Y2D) Rabbit mAb****Cell Signaling**  
TECHNOLOGY®**Orders:** 877-616-CELL (2355)  
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**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, ChIP	H M R Mk	Endogenous	165	Rabbit IgG	#O14802	11128

**Product Usage Information**

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10<sup>6</sup> cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

**Application**

Western Blotting  
Chromatin IP

**Dilution**

1:1000  
1:50

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity / Sensitivity**

POLR3A (D5Y2D) Rabbit mAb recognizes endogenous levels of total POLR3A protein.

**Species predicted to react based on 100% sequence homology:**

Bovine, Dog, Guinea Pig

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val613 of human POLR3A protein.

**Background**

POLR3A is the largest subunit of the DNA-dependent RNA polymerase III, one of the DNA-dependent RNA polymerases that transcribe small non-coding RNAs such as the 5S rRNA, tRNAs and some miRNAs (1-3). Together with the second largest subunit, POLR3A forms the catalytic center of the polymerase (4). In addition, RNA polymerase III plays a role in the innate immune response by sensing non-self double stranded DNA. Transcription of the non-self DNA into RNA induces type I interferon production through the RIG-I pathway (5,6). Studies suggest that mutations in the POLR3A gene may be linked to hypomyelinating leukodystrophies; a group of inherited neurodegenerative disorders (7-9).

**Background References**

- Dieci, G. et al. (2007) *Trends Genet* 23, 614-22.
- Teichmann, M. et al. (2010) *Transcription* 1, 130-135.
- White, R.J. (2011) *Nat Rev Genet* 12, 459-63.
- Werner, M. et al. (2009) *Curr Opin Struct Biol* 19, 740-5.
- Chiu, Y.H. et al. (2009) *Cell* 138, 576-91.
- Ablasser, A. et al. (2009) *Nat Immunol* 10, 1065-72.
- Saitsu, H. et al. (2011) *Am J Hum Genet* 89, 644-51.
- Bernard, G. et al. (2011) *Am J Hum Genet* 89, 415-23.
- Daoud, H. et al. (2013) *J Med Genet* 50, 194-7.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**WB:** Western Blotting **ChIP:** Chromatin IP

**Cross-Reactivity Key**

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster  
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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