

**#2316** Store at -20°C

## CDK9 (C12F7) Rabbit mAb


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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, IP, IHC-P, IF-IC, FC-FP, eCLIP	H M R Hm Mk B Dg	Endogenous	42, 55	Rabbit	#P50750	1025

### Product Usage Information

#### Application

Western Blotting  
Immunoprecipitation  
Immunohistochemistry (Paraffin)  
Immunofluorescence (Immunocytochemistry)  
Flow Cytometry (Fixed/Permeabilized)  
eCLIP

#### Dilution

1:1000  
1:100  
1:100 - 1:400  
1:50 - 1:100  
1:100 - 1:400  
1:200

For more information about eCLIP and the RBP-eCLIP kit, please visit Eclipse Bioinnovations.

### 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

CDK9 (C12F7) Rabbit mAb detects endogenous levels of total CDK9 protein, both 42 kDa and 55 kDa isoforms.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human CDK9.

### Background

P-TEFb is a general transcription factor that regulates transcription elongation through phosphorylation of the C-terminal tail domain (CTD) of RNA polymerase II (RNAP II). The P-TEFb complex is composed of a catalytic subunit, CDK9, and its regulatory cyclin partner, which can be cyclin T1, T2a, T2b or K (reviewed in 1,2). P-TEFb is recruited by the HIV Tat protein to allow transcriptional elongation, and subsequent replication of the viral genome. Inhibition of P-TEFb function therefore has potential for HIV therapy. CDK9 exists as two isoforms, an abundant 42 kDa isoform, and a less abundant 55 kDa isoform, which contains an amino-terminal extension (3). The two forms likely have distinct purposes based on differential expression during lymphocyte activation (4,5) and on their localization within the nucleus (5). Cyclin dependent kinases (CDKs) are activated in part by cyclin binding and by phosphorylation of a conserved threonine in the T-loop domain. Phosphorylation of CDK9 at the T-loop Thr186 by an unidentified nuclear kinase may be important in P-TEFb activation (6) and regulation of HIV transcription (7). Acetylation of CDK9 at Lys44 affects its ability to phosphorylate the RNAPII CTD (8).

### Background References

1. Rice, A.P. and Herrmann, C.H. (2003) *Curr HIV Res* 1, 395-404.
2. De Falco, G. and Giordano, A. (2002) *Cancer Biol Ther* 1, 342-7.
3. Shore, S.M. et al. (2003) *Gene* 307, 175-82.
4. Shore, S.M. et al. (2005) *Gene* 350, 51-8.
5. Liu, H. and Herrmann, C.H. (2005) *J Cell Physiol* 203, 251-60.
6. Chen, R. et al. (2004) *J Biol Chem* 279, 4153-60.
7. Ammosova, T. et al. (2005) *Retrovirology* 2, 47.
8. Fu, J. et al. (2007) *Mol Cell Biol* 27, 4641-51.

### 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 **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)  
**IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)  
**eCLIP:** eCLIP

**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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