

# CDK9 Antibody

Purified Mouse Monoclonal Antibody

Catalog # AO1561a

## Product Information

---

<b>Application</b>	WB, IHC, E
<b>Primary Accession</b>	<a href="#">P50750</a>
<b>Reactivity</b>	Human
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal
<b>Clone Names</b>	1B5A7
<b>Isotype</b>	IgG1
<b>Calculated MW</b>	42778
<b>Description</b>	The protein encoded by this gene is a member of the cyclin-dependent protein kinase (CDK) family. CDK family members are highly similar to the gene products of <i>S. cerevisiae</i> cdc28, and <i>S. pombe</i> cdc2, and known as important cell cycle regulators. This kinase was found to be a component of the multiprotein complex TAK/P-TEFb, which is an elongation factor for RNA polymerase II-directed transcription and functions by phosphorylating the C-terminal domain of the largest subunit of RNA polymerase II. This protein forms a complex with and is regulated by its regulatory subunit cyclin T or cyclin K. HIV-1 Tat protein was found to interact with this protein and cyclin T, which suggested a possible involvement of this protein in AIDS. (provided by RefSeq)Tissue specificity: Ubiquitous.
<b>Immunogen</b>	Purified recombinant fragment of human CDK9 expressed in E. Coli.
<b>Formulation</b>	Ascitic fluid containing 0.03% sodium azide.

## Additional Information

---

<b>Gene ID</b>	1025
<b>Other Names</b>	Cyclin-dependent kinase 9, 2.7.11.22, 2.7.11.23, C-2K, Cell division cycle 2-like protein kinase 4, Cell division protein kinase 9, Serine/threonine-protein kinase PITALRE, Tat-associated kinase complex catalytic subunit, CDK9, CDC2L4, TAK
<b>Dilution</b>	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 E~~1/10000
<b>Storage</b>	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
<b>Precautions</b>	CDK9 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

Name	CDK9 {ECO:0000303   PubMed:10903437, ECO:0000312   HGNC:HGNC:1780}
Function	<p>Protein kinase involved in the regulation of transcription (PubMed:<a href="#">10574912</a>, PubMed:<a href="#">10757782</a>, PubMed:<a href="#">11145967</a>, PubMed:<a href="#">11575923</a>, PubMed:<a href="#">11809800</a>, PubMed:<a href="#">11884399</a>, PubMed:<a href="#">14701750</a>, PubMed:<a href="#">16109376</a>, PubMed:<a href="#">16109377</a>, PubMed:<a href="#">20930849</a>, PubMed:<a href="#">28426094</a>, PubMed:<a href="#">29335245</a>). Member of the cyclin-dependent kinase pair (CDK9/cyclin-T) complex, also called positive transcription elongation factor b (P-TEFb), which facilitates the transition from abortive to productive elongation by phosphorylating the CTD (C-terminal domain) of the large subunit of RNA polymerase II (RNAP II) POLR2A, SUPT5H and RDBP (PubMed:<a href="#">10574912</a>, PubMed:<a href="#">10757782</a>, PubMed:<a href="#">11145967</a>, PubMed:<a href="#">11575923</a>, PubMed:<a href="#">11809800</a>, PubMed:<a href="#">11884399</a>, PubMed:<a href="#">14701750</a>, PubMed:<a href="#">16109376</a>, PubMed:<a href="#">16109377</a>, PubMed:<a href="#">16427012</a>, PubMed:<a href="#">20930849</a>, PubMed:<a href="#">28426094</a>, PubMed:<a href="#">30134174</a>). This complex is inactive when in the 7SK snRNP complex form (PubMed:<a href="#">10574912</a>, PubMed:<a href="#">10757782</a>, PubMed:<a href="#">11145967</a>, PubMed:<a href="#">11575923</a>, PubMed:<a href="#">11809800</a>, PubMed:<a href="#">11884399</a>, PubMed:<a href="#">14701750</a>, PubMed:<a href="#">16109376</a>, PubMed:<a href="#">16109377</a>, PubMed:<a href="#">20930849</a>, PubMed:<a href="#">28426094</a>). Phosphorylates EP300, MYOD1, RPB1/POLR2A and AR and the negative elongation factors DSIF and NELFE (PubMed:<a href="#">10912001</a>, PubMed:<a href="#">11112772</a>, PubMed:<a href="#">12037670</a>, PubMed:<a href="#">16427012</a>, PubMed:<a href="#">20081228</a>, PubMed:<a href="#">20980437</a>, PubMed:<a href="#">21127351</a>, PubMed:<a href="#">9857195</a>). Regulates cytokine inducible transcription networks by facilitating promoter recognition of target transcription factors (e.g. TNF-inducible RELA/p65 activation and IL-6-inducible STAT3 signaling) (PubMed:<a href="#">17956865</a>, PubMed:<a href="#">18362169</a>). Promotes RNA synthesis in genetic programs for cell growth, differentiation and viral pathogenesis (PubMed:<a href="#">10393184</a>, PubMed:<a href="#">11112772</a>). P-TEFb is also involved in cotranscriptional histone modification, mRNA processing and mRNA export (PubMed:<a href="#">15564463</a>, PubMed:<a href="#">19575011</a>, PubMed:<a href="#">19844166</a>). Modulates a complex network of chromatin modifications including histone H2B monoubiquitination (H2Bub1), H3 lysine 4 trimethylation (H3K4me3) and H3K36me3; integrates phosphorylation during transcription with chromatin modifications to control co-transcriptional histone mRNA processing (PubMed:<a href="#">15564463</a>, PubMed:<a href="#">19575011</a>, PubMed:<a href="#">19844166</a>). The CDK9/cyclin-K complex has also a kinase activity towards CTD of RNAP II and can substitute for CDK9/cyclin-T P-TEFb in vitro (PubMed:<a href="#">21127351</a>). Replication stress response protein; the CDK9/cyclin-K complex is required for genome integrity maintenance, by promoting cell cycle recovery from replication arrest and limiting single-stranded DNA amount in response to replication stress, thus reducing the breakdown of stalled replication forks and avoiding DNA damage (PubMed:<a href="#">20493174</a>). In addition, probable function in DNA repair of isoform 2 via interaction with KU70/XRCC6 (PubMed:<a href="#">20493174</a>). Promotes cardiac myocyte enlargement (PubMed:<a href="#">20081228</a>). RPB1/POLR2A phosphorylation on 'Ser-2' in CTD activates transcription (PubMed:<a href="#">21127351</a>). AR phosphorylation modulates AR transcription factor promoter selectivity and cell growth. DSIF and NELF phosphorylation promotes transcription by inhibiting their negative effect (PubMed:<a href="#">10912001</a>, PubMed:<a href="#">11112772</a>, PubMed:<a href="#">9857195</a>). The phosphorylation of MYOD1 enhances its transcriptional activity and thus promotes muscle differentiation (PubMed:<a href="#">12037670</a>). Catalyzes phosphorylation of KAT5, promoting KAT5 recruitment to chromatin and histone acetyltransferase activity (PubMed:<a href="#">29335245</a>).</p>
Cellular Location	Nucleus. Cytoplasm. Nucleus, PML body. Note=Accumulates on chromatin in

response to replication stress Complexed with CCNT1 in nuclear speckles, but uncomplexed form in the cytoplasm. The translocation from nucleus to cytoplasm is XPO1/CRM1- dependent. Associates with PML body when acetylated

**Tissue Location**

Ubiquitous.

## References

---

1. J Biol Chem. 2008 Mar 21;283(12):7368-78. 2. Mol Cell Biol. 2008 Apr;28(7):2201-12.

## Images

---

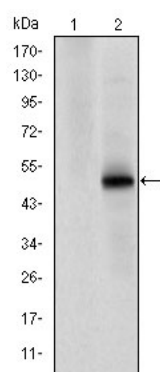


Figure 1: Western blot analysis using CDK9 mAb against HEK293 (1) and CDK9(AA: 178-369)-hIgGfC transfected HEK293 (2) cell lysate.

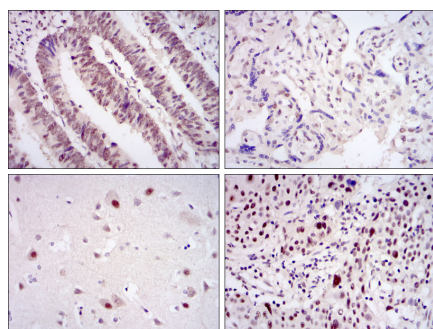


Figure 2: Immunohistochemical analysis of paraffin-embedded rectum cancer tissues (left) and placenta tissues (right) using CDK9 mouse mAb with DAB staining.

Figure 3: Immunohistochemical analysis of paraffin-embedded brain tissues (left) and esophageal cancer tissues (right) using CDK9 mouse mAb with DAB staining.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.