

**CDK12 Antibody**

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

<b>Applications:</b> W	<b>Reactivity:</b> H Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 205	<b>Source/Isotype:</b> Rabbit	<b>UniProt ID:</b> #Q9NYV4	<b>Entrez-Gene Id:</b> 51755
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<b>Product Usage Information</b>	<b>Application</b> Western Blotting	<b>Dilution</b> 1:1000
<b>Storage</b>	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.	
<b>Specificity/Sensitivity</b>	CDK12 Antibody recognizes endogenous levels of total CDK12 protein. This antibody also cross-reacts with proteins of unknown origin at 48 and 53 kDa.	
<b>Source / Purification</b>	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val492 of human CDK12 protein. Antibodies are purified by protein A and peptide affinity chromatography.	
<b>Background</b>	Cyclin-dependent kinase 12 (CDK12/CRKRS/CRK7) is composed of a central CTD kinase domain, several proline-rich regions, and several amino-terminal arginine/serine (RS) motifs common to splicing factors (1). CDK12 is ubiquitously expressed and forms a complex with cyclin K that regulates phosphorylation of the C-terminal domain (CTD) of RNA polymerase II (1-4). CDK12 is important for expression of a subset of long genes with high numbers of exons including some regulators of the DNA damage response, such as breast and ovarian cancer type 1 susceptibility protein 1 (BRCA1) and ataxia telangiectasia and Rad3-related (ATR) (3). Depletion of CDK12 results in spontaneous DNA damage and increased sensitivity to DNA damage agents (3). Research studies have shown that CDK12 is recurrently mutated in high-grade ovarian cancer (5,6). In addition, high levels of CDK12 are required to maintain pluripotency of embryonic stem cells (7).	
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Ko, T.K. et al. (2001) <i>J Cell Sci</i> 114, 2591-603.</li> <li>2. Bartkowiak, B. et al. (2010) <i>Genes Dev</i> 24, 2303-16.</li> <li>3. Blazek, D. et al. (2011) <i>Genes Dev</i> 25, 2158-72.</li> <li>4. Cheng, S.W. et al. (2012) <i>Mol Cell Biol</i> 32, 4691-704.</li> <li>5. The Cancer Genome Atlas Research Network (2011) <i>Nature</i> 474, 609-15.</li> <li>6. Carter, S.L. et al. (2012) <i>Nat Biotechnol</i> 30, 413-21.</li> <li>7. Dai, Q. et al. (2012) <i>J Biol Chem</i> 287, 25344-52.</li> </ol>	

<b>Species Reactivity</b>	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
<b>Western Blot Buffer</b>	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
<b>Applications Key</b>	<b>W:</b> Western Blotting
<b>Cross-Reactivity Key</b>	<b>H:</b> Human <b>Mk:</b> Monkey
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