

CDK8 (D6M3J) Rabbit mAb

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Applications: W, IP	Reactivity: H M Mk	Sensitivity: Endogenous	MW (kDa): 53	Source/Isotype: Rabbit IgG	UniProt ID: #P49336	Entrez-Gene Id: 1024
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Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:200

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

CDK8 (D6M3J) Rabbit mAb recognizes endogenous levels of total CDK8 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro455 of human CDK8 protein.

Background

The mammalian Mediator Complex is a multi-subunit protein complex that couples specific transcriptional regulators to RNA polymerase II (Pol II) and the basal transcription machinery. Interactions between distinct Mediator subunits and transcription factors allow for specific gene regulation (reviewed in 1). Mediator complex interactions control various biological processes, including insulin signaling (2), NF-κB-dependent signaling (3), stem cell pluripotency and self renewal (4,5), and proliferation of colon cancer cells (6,7). CDK8/Cyclin C, along with Med12 and Med13, constitute a subcomplex within the Mediator Complex thought to act as a molecular switch, inhibiting Pol II recruitment and transcription initiation (8,9). Expression of CDK8 abrogates E2F-1-dependent inhibition of β-catenin activity in colon cancer cells (9). High levels of CDK8 coincide with high β-catenin-dependent transcription in colon cancer cells, and their proliferation can be inhibited by suppressing CDK8 expression (8). CDK8 can phosphorylate Ser727 on STAT1, which reduces natural killer (NK) cell toxicity (10,11). As such, inhibitors are being pursued as potential therapeutics to enhance NK cell activity and combat a variety of cancer types (12,13).

Background References

1. Malik, S. and Roeder, R.G. (2005) *Trends Biochem Sci* 30, 256-63.
2. Wang, W. et al. (2009) *Dev Cell* 16, 764-71.
3. van Essen, D. et al. (2009) *PLoS Biol* 7, e73.
4. Tutter, A.V. et al. (2009) *J Biol Chem* 284, 3709-18.
5. Varelas, X. et al. (2008) *Nat Cell Biol* 10, 837-48.
6. Firestein, R. et al. (2008) *Nature* 455, 547-51.
7. Morris, E.J. et al. (2008) *Nature* 455, 552-6.
8. Knuesel, M.T. et al. (2009) *Mol Cell Biol* 29, 650-61.
9. Knuesel, M.T. et al. (2009) *Genes Dev* 23, 439-51.
10. Bancerek, J. et al. (2013) *Immunity* 38, 250-62.
11. Putz, E.M. et al. (2013) *Cell Rep* 4, 437-44.
12. Dale, T. et al. (2015) *Nat Chem Biol* 11, 973-80.
13. Rzymiski, T. et al. (2017) *Oncotarget*, .

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

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **Mk:** Monkey

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