

Store at
-20C
#46650**Phospho-c-Myc (Thr58) (E4Z2K) Rabbit mAb****Orders:** 877-616-CELL (2355)
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W	Reactivity: H M	Sensitivity: Endogenous	MW (kDa): 62	Source/Isotype: Rabbit IgG	UniProt ID: #P01106	Entrez-Gene Id: 4609
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Product Usage Information**Application**

Western Blotting

Dilution

1:1000

StorageSupplied 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**

Phospho-c-Myc (Thr58) (E4Z2K) Rabbit mAb recognizes endogenous levels of c-Myc protein only when phosphorylated at Thr58. This antibody may react to c-Myc when dually phosphorylated at Thr58 and Ser62. This phosphorylation site is also conserved at Thr58 in N-Myc.

Species predicted to react based on 100% sequence homology

Rat

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr58 of human c-Myc protein.

Background

Members of the Myc/Max/Mad network function as transcriptional regulators with roles in various aspects of cell behavior, including proliferation, differentiation, and apoptosis (1). These proteins share a common basic-helix-loop-helix leucine zipper (bHLH-ZIP) motif required for dimerization and DNA-binding. Max was originally discovered based on its ability to associate with c-Myc and found to be required for the ability of Myc to bind DNA and activate transcription (2). Subsequently, Max has been viewed as a central component of the transcriptional network, forming homodimers as well as heterodimers with other members of the Myc and Mad families (1). The association between Max and either Myc or Mad can have opposing effects on transcriptional regulation and cell behavior (1). The Mad family consists of four related proteins; Mad1, Mad2 (Mxi1), Mad3, and Mad4, and the more distantly related members of the bHLH-ZIP family, Mnt and Mga. Like Myc, the Mad proteins are tightly regulated with short half-lives. In general, Mad family members interfere with Myc-mediated processes, such as proliferation, transformation, and prevention of apoptosis by inhibiting transcription (3,4).

Phosphorylation of c-Myc at Thr58 and Ser62 can control proteasomal-dependent degradation of the transcription factor. Phosphorylation of c-Myc at these sites is a stepwise process, whereby mitogens, mitosis, or cellular stress induce phosphorylation at Ser62, which serves as a priming site for GSK-3 phosphorylation of Thr58 (5-9).

Background References

1. Baudino, T.A. and Cleveland, J.L. (2001) *Mol Cell Biol* 21, 691-702.
2. Blackwood, E.M. and Eisenman, R.N. (1991) *Science* 251, 1211-7.
3. Henriksson, M. and Lüscher, B. (1996) *Adv Cancer Res* 68, 109-82.
4. Grandori, C. et al. (2000) *Annu Rev Cell Dev Biol* 16, 653-99.
5. Lutterbach, B. and Hann, S.R. (1994) *Mol Cell Biol* 14, 5510-22.
6. Gregory, M.A. et al. (2003) *J Biol Chem* 278, 51606-12.
7. Yada, M. et al. (2004) *EMBO J* 23, 2116-25.
8. Seo, H.R. et al. (2008) *J Biol Chem* 283, 15601-10.
9. Benassi, B. et al. (2006) *Mol Cell* 21, 509-19.

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

Cross-Reactivity Key

H: Human **M:** Mouse

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