

Store at
-20°C

#52716

PhosphoPlus® c-Myc (Ser62) Antibody Duet



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Entrez-Gene ID #4609
UniProt ID #P01106

New 04/20

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype
Phospho-c-Myc (Ser62) (E1J4K) Rabbit mAb	13748	100 µl	62 kDa	Rabbit IgG
c-Myc (E5Q6W) Rabbit mAb	18583	100 µl	57-65 kDa	Rabbit IgG

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

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).

Specificity/Sensitivity: Phospho-c-Myc (Ser62) (E1J4K) Rabbit mAb recognizes endogenous levels of c-Myc protein only when phosphorylated at Ser62. This antibody may not recognize c-Myc phosphorylated at Ser62 when Thr58 is also phosphorylated. c-Myc (E5Q6W) Rabbit mAb recognizes endogenous levels of total c-Myc protein.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser62 of human c-Myc protein and a recombinant protein specific to the amino terminus of human c-Myc protein.

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.

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

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.

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey 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 All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.