Revision 3

#3073 Store at -20C

Phospho-c-Kit (Tyr703) (D12E12) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	145	Rabbit IgG	#P10721	3815

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

Phospho-c-Kit (Tyr703) (D12E12) Rabbit mAb detects endogenous levels of c-Kit only when phosphorylated at Tyr703. This antibody may cross-react with other tyrosine-phosphorylated RTKs.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr703 of human c-Kit.

Background

c-Kit is a member of the subfamily of receptor tyrosine kinases that includes PDGF, CSF-1, and FLT3/flk-2 receptors (1,2). It plays a critical role in activation and growth in a number of cell types, including hematopoietic stem cells, mast cells, melanocytes, and germ cells (3). Upon binding with its stem cell factor (SCF) ligand, c-Kit undergoes dimerization/oligomerization and autophosphorylation. Activation of c-Kit results in the recruitment and tyrosine phosphorylation of downstream SH2-containing signaling components, including PLCγ, the p85 subunit of PI3 kinase, SHP2, and CrkL (4). Molecular lesions that impair the kinase activity of c-Kit are associated with a variety of developmental disorders (5), and mutations that constitutively activate c-Kit can lead to pathogenesis of mastocytosis and gastrointestinal stromal tumors (6). Tyr719 is located in the kinase insert region of the catalytic domain. c-Kit phosphorylated at Tyr719 binds to the p85 subunit of PI3 kinase *in vitro* and *in vivo* (7).

Tyr703 is also located in kinase insert of c-kit. Its phosphorylation provides a docking site for Grb2 binding (8). It was demonstrated that Tyr703 was constitutively phosphorylated in GIST tumor cells (9).

Background References

1. Martin, F.H. et al. (1990) *Cell* 63, 203-11.
2. Yarden, Y. et al. (1987) *EMBO J* 6, 3341-51.
3. Gommerman, J.L. et al. (1997) *J Biol Chem* 272, 30519-25.
4. Sattler, M. et al. (1997) *J Biol Chem* 272, 10248-53.
5. Nocka, K. et al. (1990) *EMBO J* 9, 1805-13.
6. Hirota, S. et al. (1998) *Science* 279, 577-80.
7. Blume-Jensen, P. et al. (2000) *Nat Genet* 24, 157-62.
8. Thömmes, K. et al. (1999) *Biochem J* 341 (Pt 1), 211-6.
9. Duensing, A. et al. (2004) *Oncogene* 23, 3999-4006.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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 **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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