Revision 1

Store at -20C

#48347

Phospho-c-Kit (Tyr568/570) Antibody

Cell Signaling TECHNOLOGY®

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

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

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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.

Specificity/Sensitivity

Phospho-c-Kit (Tyr568/570) Antibody recognizes endogenous levels of c-Kit protein only when phosphorylated at Tyr568/570. This antibody also recognizes a hSCF-induced, non-specific band at 95 kDa from a protein of unknown identity.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr568/570 of human c-Kit protein. Antibodies are purified by protein A and peptide affinity chromatography.

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).

Tyr568 and Tyr570 are located in the juxtamembrane region of c-Kit. The phosphorylation of c-Kit at these sites is ligand induced and provides a docking site for recruitment of several adaptors/kinases, including Src, Cbl, SHP-1, APS, LNK, and SOSC6. Depending on which adaptor is bound, the outcome can lead to either cell survival and proliferation or c-Kit ubiquitination and degradation (8-13).

Background References

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5. Nocka, K. et al. (1990) *EMBO J* 9, 1805-13.
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7. Blume-Jensen, P. et al. (2000) *Nat Genet* 24, 157-62.
8. Phung, B. et al. (2011) *PLoS One* 6, e24064.
9. Simon, C. et al. (2008) *Blood* 112, 4039-47.
10. Masson, K. et al. (2006) *Biochem J* 399, 59-67.
11. Bayle, J. et al. (2004) *J Biol Chem* 279, 12249-59.
12. Wollberg, P. et al. (2003) *Biochem J* 370, 1033-8.
13. Kozlowski, M. et al. (1998) *Mol Cell Biol* 18, 2089-99.

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

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