Revision 1

Store at -20C

#5469

TTK (D15B7) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	95	Rabbit IgG	#P33981	7272

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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

TTK (D15B7) Rabbit mAb detects endogenous levels of total TTK protein. A background band of unknown origin is detected at 70 kDa.

Species predicted to react based on 100% sequence homology

Monkey

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to a region surrounding Ala560 of human TTK protein.

Background

TTK (Mps1, PYT) is a cell cycle regulated dual specificity kinase present in rapidly proliferating tissues and cell lines (1-3). TTK localizes to kinetochores and centromeres and is an essential component of the mitotic spindle checkpoint as well as centrosome duplication (4-6). The mitotic checkpoint inhibits entry into anaphase until all chromosomes are attached to the spindle; inhibition of this process leads to genomic instability and tumorigenesis. Phosphorylation of the BLM helicase at Ser144 by TTK maintains chromosome stability during mitosis (7). Small molecule inhibitors of TTK can block the spindle checkpoint response, thereby making TTK a potential therapeutic target (8,9).
TTK also participates in the DNA damage response by directly phosphorylating and activating the cell cycle checkpoint kinase Chk2 at Thr68. Two targets phosphorylated by Chk2 are the cell cycle phosphatase cdc25 and the transcription factor p53. Inactivation of cdc25 phosphatase results in the accumulation of inactive cyclin B and cell cycle arrest following DNA damage. Phosphorylation of p53 by active Chk2 stabilizes the transcription factor and promotes cell cycle arrest and apoptosis in response to DNA damage (10).

Background References

1. Mills, G.B. et al. (1992) *J. Biol. Chem.* 267, 16000-16006.
2. Stucke, V.M. et al. (2002) *EMBO J.* 21, 1723-1732.
3. Lindberg, R.A. et al. (1993) *Oncogene* 8, 351-359.
4. Fisk, H.A. et al. (2003) *Proc. Natl. Acad. Sci. USA* 100, 14875-14880.
5. Dou, Z. et al. (2003) *Cell Res.* 13, 443-449.
6. Abrieu, A. et al. (2001) *Cell* 106, 83-93.
7. Leng, M. et al. (2006) *Proc. Natl. Acad. Sci. USA* 103, 11485-11490.
8. Schmidt, M. et al. (2005) *EMBO Rep.* 6, 866-872.
9. Dorer, R.K. et al. (2005) *Curr. Biol.* 15, 1070-1076.
10. Wei, J.H. et al. (2005) *J. Biol. Chem.* 280, 7748-7757.

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

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