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# TTK Antibody

Store at -20C  
#3255

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

<b>Applications:</b> W, IP	<b>Reactivity:</b> H	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 95	<b>Source/Isotype:</b> Rabbit	<b>UniProt ID:</b> #P33981	<b>Entrez-Gene Id:</b> 7272
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## Product Usage Information

### Application

Western Blotting  
Immunoprecipitation

### Dilution

1:1000  
1:50

## 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

TTK Antibody detects endogenous levels of total TTK protein. TTK, also known as PYT (*Phosphotyrosine Picked Threonine Kinase*), is the human homolog of MSP1 (*Monopolar Spindle 1*) in budding yeast and murine ESK (*Embryonal Carcinoma STY Kinase*).

## Species predicted to react based on 100% sequence homology

Monkey

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Glu137 of human TTK. Antibodies were purified by affinity chromatography.

## 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

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- Lindberg, R.A. et al. (1993) *Oncogene* 8, 351-359.
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- Dou, Z. et al. (2003) *Cell Res.* 13, 443-449.
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- Leng, M. et al. (2006) *Proc. Natl. Acad. Sci. USA* 103, 11485-11490.
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- 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 nonfat dry milk, 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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