

#4125 Store at -20°C

TLK1 Antibody

✓ 100 µl (10 western blots)

Orders ■ 877-616-CELL (2355) orders@cellsignal.com
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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #9874
Swiss-Prot Acc. #Q9UKI8

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-IC Endogenous	H, M, R	86	Rabbit**

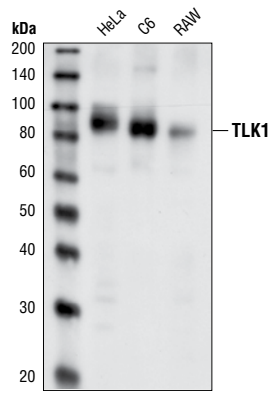
Background: Touseled-like kinases (TLK1 and TLK2) are nuclear serine/threonine kinases named for their homology to the Touseled gene from *Arabidopsis thaliana*, essential for flower development (1). The kinase activities of the TLKs are cell cycle regulated, with maximal activity during S phase (1). TLK appears to play a role in chromatin assembly and DNA damage checkpoint regulation (1,2). In *C. elegans*, TLK1 is essential for appropriate transcription during embryonic development (3). Substrates for TLK include the human chromatin assembly factor Asf, which functions in DNA replication- and repair-coupled chromatin assembly (2). DNA damage during S phase, when TLK is maximally active, leads to inhibition of TLK activity (1). This inhibition requires ataxia mutated kinase (ATM) and Chk1 (4,5). ATM and the related kinase ATR are activated by DNA damage during S phase, phosphorylate Chk1/Chk2, and block the transition into mitosis (6). Chk1 phosphorylates TLK1 on Ser695 in vitro and in vivo, leading to inhibition of TLK1 activity (4). This process likely provides a mechanism to slow the chromatin assembly processes controlled by TLK in the event of DNA damage.

Specificity/Sensitivity: TLK1 Antibody detects endogenous levels of total TLK1. The antibody may cross-react with TLK2.

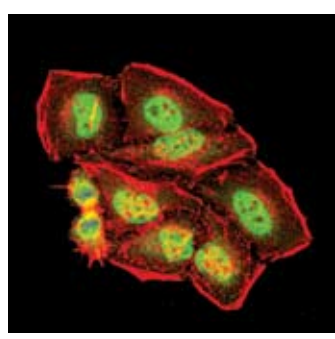
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues adjacent to Ser183 of human TLK1. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

- (1) Sillje, H. H. et al. (1999) *EMBO J.* 18, 5691-5702.
- (2) Sillje, H.H. and Nigg, E.A. (2001) *Curr. Biol.* 11, 1068-1073.
- (3) Han, Z. et al. (2003) *Curr. Biol.* 13, 1921-1929.
- (4) Groth, A. et al. (2003) *EMBO J.* 22, 1676-1687.
- (5) Krause, D. R. et al. (2003) *Oncogene* 22, 5927-5937.
- (6) Kastan, M.B. and Lim, D.S. (2000) *Nat. Rev. Mol. Cell Biol.* 1, 179-186.



Western blot analysis of extracts from HeLa (human), C6 (rat), and RAW 264.7 (mouse) cells, using TLK1 Antibody.



Confocal immunofluorescent analysis of HeLa cells using TLK1 Antibody (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

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.

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunofluorescence (IF-IC)	1:100

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: 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.