

# Acetyl- $\alpha$ -Tubulin (Lys40) (D20G3) XP™ Rabbit mAb

- Small 100  $\mu$ l (10 western blots)
- Petite 40  $\mu$ l (4 western blots)



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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.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC Endogenous	H, M, R, Mk, Z	50 kDa	Rabbit IgG**

**Background:** The cytoskeleton consists of three types of cytosolic fibers: microtubules, microfilaments (actin filaments), and intermediate filaments. Globular tubulin subunits comprise the microtubule building block, with  $\alpha$ / $\beta$ -tubulin heterodimers forming the tubulin subunit common to all eukaryotic cells.  $\gamma$ -tubulin is necessary to nucleate polymerization of tubulin subunits to form microtubule polymers. Many cell movements are mediated by microtubule action, including the beating of cilia and flagella, cytoplasmic transport of membrane vesicles, chromosome alignment during meiosis/mitosis, and nerve-cell axon migration. These movements result from competitive microtubule polymerization and depolymerization or through the actions of microtubule motor proteins (1).

The Elongator complex catalytic subunit (Eip3) acetylates  $\alpha$ -tubulin at Lys40 while the histone deacetylase HDAC6 functions as a tubulin deacetylase. This post-transcriptional modification may be required for dynamic cell shape remodeling, cell motility, tubulin stability and terminal branching of cortical neurons (2,3).

**Specificity/Sensitivity:** Acetyl- $\alpha$ -Tubulin (Lys40) (D20G3) XP™ Rabbit mAb detects endogenous levels of  $\alpha$ -tubulin only when acetylated at Lys40. This amino acid is not conserved in  $\beta$ -tubulin.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic acetylpeptide corresponding to residues surrounding Lys40 of human  $\alpha$ -tubulin.

**Background References:**

- (1) Westermann, S. and Weber, K. (2003) *Nat. Rev. Mol. Cell Biol.* 4, 938-947.
- (2) Creppe, C. et al. (2009) *Cell* 136, 551-564.
- (3) Hubbert, C. et al. (2002) *Nature* 417, 455-458.

Entrez-Gene ID #10376  
Swiss-Prot Acc. #P68363

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. 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:**

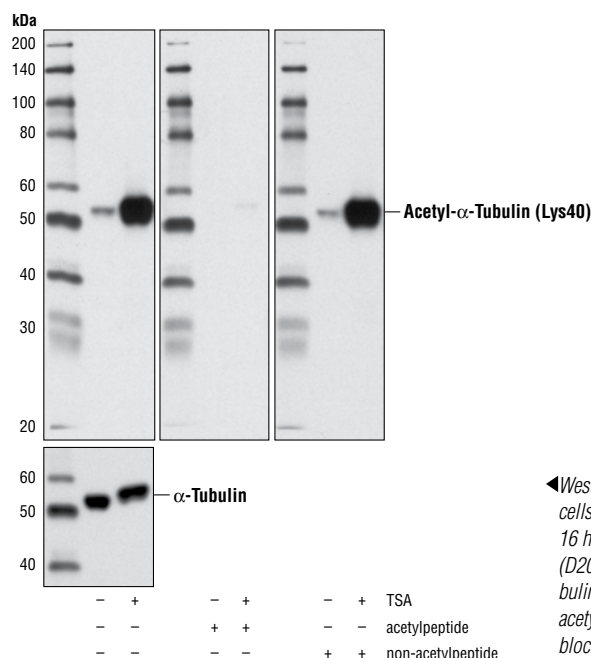
Western blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:800

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

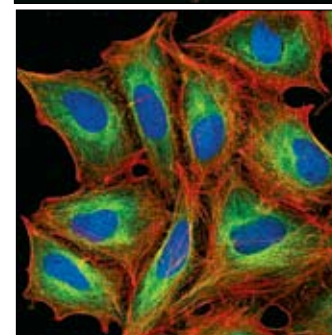
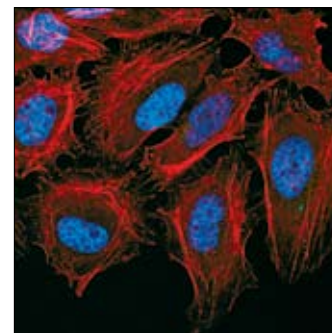
Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**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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◀Western blot analysis of extracts from HeLa cells, untreated or TSA-treated (400 nM for 16 hours), using Acetyl- $\alpha$ -Tubulin (Lys40) (D20G3) XP™ Rabbit mAb (upper) and  $\alpha$ -Tubulin (11H10) Rabbit mAb #2125 (lower). The acetyl-specificity of the antibody was verified by blocking with an acetyl- or non-acetylpeptide.



Confocal immunofluorescent analysis of HeLa cells, untreated (upper) or treated with Trichostatin A #9950 (lower), using Acetyl- $\alpha$ -Tubulin (Lys40) (D20G3) XP™ Rabbit mAb (green). Actin filaments have been labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

**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.