Revision 1

Store at -20C

#13633

Phospho-CLASP2 (Ser1234) Antibody

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	165	Rabbit	#O75122	23122

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-CLASP2 (Ser1234) Antibody recognizes endogenous levels of CLASP2 protein only when phosphorylated at Ser1234.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser1234 of human CLASP2 protein. Antibodies are purified by protein A and peptide affinity chromatography. **Note:** The antigen used to generate this antibody includes Ser1234 as given in the canonical sequence NP_001193973.1, which is distinct from the human CLASP2 Ser1234 described in Maia, A.R. et al. (2012) *J Cell Biol* 199, 285-301 (4).

Background

Microtubules (MTs) are polarized cellular filaments composed of α/β tubulin heterodimers. The slower growing (minus) microtubule ends are located at MT organizing centers (MTOCs), with the faster growing (plus) ends extending to the cell periphery. The regulation of MT dynamics is an important part of several biological processes, including cell division, migration, adhesion, membrane trafficking, and polarity (1).
Human cytoplasmic linker-associate proteins 1 and 2 (CLASP1 and CLASP2) are evolutionarily conserved proteins that localize to the plus ends of interphase microtubules. During mitosis, CLASP 1 and CLASP2 localize to the centrosomes and kinetochores (KT) where they regulate mitotic spindle positioning to ensure proper chromosome alignment (2,3). Research studies indicate that phosphorylation of the carboxy terminus of CLASP2 during mitosis by CDK1 and PLK1 is required for efficient mitotic MT-KT attachment (4). Phosphorylation of CLASP2 at Ser1013 is a critical step that primes CLASP2 for further phosphorylation by PLK1 (4). The additional phosphorylation of CLASP2 at Ser533 and Ser537 by GSK3-3β controls the distribution of CLASP2 on MTs by inhibiting CLASP2 interaction with the Rac1/cdc42 effector protein IQGAP1 (5).

Background References

1. Wiese, C. and Zheng, Y. (2006) *J Cell Sci* 119, 4143-53.
2. Mimori-Kiyosue, Y. et al. (2005) *J Cell Biol* 168, 141-53.
3. Logarinho, E. et al. (2012) *Nat Cell Biol* 14, 295-303.
4. Maia, A.R. et al. (2012) *J Cell Biol* 199, 285-301.
5. Watanabe, T. et al. (2009) *J Cell Sci* 122, 2969-79.

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

Cross-Reactivity Key

H: Human

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