Revision 3

Claspin Antibody

#2800 Store at -20C

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	220	Rabbit	#Q9HAW4	63967

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

Claspin Antibody detects endogenous levels of total claspin protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acids near the carboxy terminus of human claspin. Antibodies are purified by peptide affinity chromatography.

Background

Originally identified in Xenopus (1), and later in human cells (2), claspin is a mediator of Chk1 signal transduction at the replication checkpoint and in response to DNA damage. Expression of claspin is cell cycle-regulated, with protein levels peaking at the S/G2 phase (2). Expression is negatively regulated by both proteosome- and caspase-mediated degradation (3), and stabilized by activation of Chk1 (4). Claspin is a chromatin-bound protein, and has been shown to interact with the PNCA complex in the absence of DNA damage (5). Following checkpoint activation it remains chromatin-bound but is released from the PCNA complex and is phosphorylated in an ATR-dependent manner. Phosphorylated claspin interacts with several components of the DNA damage response including BRCA1 (6) and Chk1 (7), leading to ATR-dependent phosphorylation on each of these proteins. Phosphorylated Rad17 has also been shown to bind to and regulate the phosphorylation of claspin (8). It has been proposed that claspin behaves as a tumor suppressor in come cases since down-regulation promotes apoptosis following genotoxic stress (2). Conversely, claspin seems to behave as an oncogene in other instances since overexpression promotes cellular proliferation (6). Upregulated claspin has been suggested to be a sensitive marker of abnormally proliferating cells (9).

Background References

1. Kumagai, A. and Dunphy, W.G. (2000) *Mol Cell* 6, 839-49.
2. Chini, C.C. and Chen, J. (2003) *J Biol Chem* 278, 30057-62.
3. Semple, J.I. et al. (2007) *Cell Death Differ* 14, 1433-42.
4. Chini, C.C. et al. (2006) *Oncogene* 25, 4165-71.
5. Brondello, J.M. et al. (2007) *Biochem Biophys Res Commun* 354, 1028-33.
6. Lin, S.Y. et al. (2004) *Proc Natl Acad Sci U S A* 101, 6484-9.
7. Jeong, S.Y. et al. (2003) *J Biol Chem* 278, 46782-8.
8. Wang, X. et al. (2006) *Mol Cell* 23, 331-41.
9. Tsimaratou, K. et al. (2007) *J Pathol* 211, 331-9.

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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