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ProductInformation

Anti-Claspin (C-terminal)
produced in rabbit, IgG fraction of antiserum

Catalog Number **C7867**

Product Description

Anti-Claspin (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 1321-1339 of human Claspin (GeneID 63967), conjugated to KLH via an N-terminal added cysteine residue. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Claspin (C-terminal) specifically recognizes claspin by immunoblotting (250 kDa). A 170 kDa band that may correspond to a claspin related protein is observed in some cell lines. Staining of the claspin bands in immunoblotting is specifically inhibited by the immunizing peptide.

DNA damage checkpoints are biochemical pathways that delay or arrest cell cycle progression in response to DNA damage.[1, 2] Key checkpoint regulators are conserved throughout evolution in eukaryotes. As an example, cloning of the human ATM gene revealed significant homology with its yeast counterparts.[3, 4] The sensors ATM and ATR, which are central players in the checkpoint signaling pathway, are activated by IR or UV irradiation, respectively. ATM is activated in response to double-strand breaks (DSB), whereas ATR is activated in response to stalled replication forks and to damages that cause distortions and single strands.[1, 5] RAD1, RAD9, HUS1, and RAD17 are sensor proteins as well.[6] RAD1, RAD9 and HUS1 form a stable radioresponsive checkpoint complex, commonly known as 9-1-1, which participates in human cellular responses to DNA damage.[5-8] 9-1-1 holds structural and functional similarity to the sliding clamp proliferating cell nuclear antigen (PCNA), and can be recruited to the sites of DNA damage by RAD17-RFC where it attracts specialized DNA polymerases and other DNA repair effectors.[6-9] Downstream of the ATM/ATR family are the Mediators, which include MDC1, 53BP1, BRCA1, and claspin, that transduce the signal to the downstream protein kinases Chk1 and Chk2.[1, 10] Claspin was isolated from *Xenopus* extracts as a Chk1 binding protein. Claspin-depleted extracts were unable to arrest the cell cycle in response to DNA replication blocks, suggesting an involvement in the checkpoint pathway. In mammalian cells, it was shown that claspin expression is cell cycle-regulated and that it interacts with ATR, Chk1, BRCA1, and the Rad9-Rad1-Hus1 complex.[11] The human homolog of Claspin is required for resistance to multiple forms of genotoxic stress including UV, IR and hydroxurea. ATR regulates claspin phosphorylation in response to DNA damage and replicaton stress resulting in recruitment and phosphorylation of BRCA1. Thus, its function may be to recruit BRCA1 and Chk1 to ATR at chromatin damaged sites. In addition, it was found that claspin has a positive role in the control of cell proliferation.[11, 12]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1:250-1:500 is recommended using K562 cell extracts.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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