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Product Information

Anti-HUS1

produced in rabbit, affinity isolated antibody

Catalog Number **H4664**

Product Description

Anti-HUS1 is developed in rabbit using a synthetic peptide corresponding to amino acids 147-164 of human HUS1, conjugated to KLH via an N-terminal added cysteine residue, as immunogen. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-HUS1 specifically recognizes human HUS1. Applications include immunoblotting, 32 kDa, and immunoprecipitation. Staining of the HUS1 band in immunoblotting is specifically inhibited by the immunizing peptide.

DNA damage activates checkpoints which arrest cell cycle progression to allow for repair of the damage and prevention of the transmission of damaged chromosomes. The DNA damage checkpoint has three components: sensors, signal transducers, and effectors. The sensor proteins are activated upon DNA damage and thus start the DNA damage response.¹ HUS1 belongs to this family of sensor proteins, which also includes ATM and ATR.² It forms a heterotrimeric complex with the checkpoint proteins RAD9 and RAD1 known together as the 9-1-1 complex.³⁻⁵ In response to DNA damage, the trimeric complex interacts with another protein complex consisting of checkpoint protein RAD17 and four small subunits of the replication factor C (RFC), which loads the combined complex onto chromatin.⁶ The complex attracts specialized DNA polymerases and other DNA repair effectors. The 9-1-1 complex also interacts with replication protein A (RPA) which may serve as a regulator for the activity of the complex.⁷ HUS1 has one paralog HUS1B, which is 48% identical and 69% similar to HUS1.⁸ They are both expressed in many human tissues but have distinct roles in regulating cell cycle checkpoints and genomic integrity.

Reagent

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

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous 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 concentration of 1-2 µg/mL is recommended using HeLa cell nuclear extracts.

Immunoprecipitation: 2.5-5 µg of the antibody can immunoprecipitate HUS1 from HeLa cell lysates.

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

References

1. Sancar, A., et al., *Annu. Rev. Biochem.*, **73**, 39-85 (2004).
2. Dean, F.B., et al., *Genomics*, **54**, 424-436 (1998).
3. Volkmer, E., and Karnitz, L.M., *J. Biol. Chem.*, **274**, 567-570 (1999).

4. Hang, H., and Lieberman, H.B., *Genomics*, **65**, 24-33 (2000).
5. Burtelow, M.A., et al., *J. Biol. Chem.*, **276**, 25903-25909 (2001).
6. Lindsey-Boltz, L.A., et al., *Proc. Natl. Acad. Sci. USA*, **98**, 11236-11241 (2001).
7. Wu, X., et al., *Oncogene*, **24**, 4728-4735 (2005).
8. Hang, H., et al., *Genomics*, **79**, 487-492 (2002).

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