Revision 1

#16416 Store at -20C

HUS1 (D4J9H) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	30	Rabbit IgG	#O60921	3364

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

HUS1 (D4J9H) Rabbit mAb recognizes endogenous levels of total HUS1 protein. In some cell lysates, this antibody detects a 45 kDa band of unknown origin.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gln147 of human HUS1 protein.

Background

DNA damage resulting from genotoxic stress activates cellular checkpoints that prevent or delay cell division until damaged DNA is repaired or the cell follows an apoptotic pathway. The Rad9 homolog A (Rad9A, Rad9) protein is part of a checkpoint protein complex that acts as an early sensor of DNA damage. Together with the HUS1 and Rad1 checkpoint proteins, Rad9 forms a heterotrimeric 9-1-1 complex with a ring structure similar to the processivity factor PCNA. The 9-1-1 complex induces multiple signaling pathways, including the ATM- and ATR-activated DNA repair pathways (1,2). A functional 9-1-1 complex is required for ATR-dependent S phase checkpoint signaling (3).

The 9-1-1 complex interacts with DNA topoisomerase 2-binding protein 1 (TopBP1) in response to DNA damage, activating ATR and causing signal amplification through further recruitment of TopBP1 (4). The 9-1-1 complex interacts with DNA mismatch repair proteins MSH2, MSH3, and MSH6 to play a role in mismatch repair (5). During an error-free DNA damage tolerance process, the 9-1-1 complex cooperates with polyubiquitinated PCNA and Exo1 nuclease to support switching of the replicative polymerase to the undamaged template (6).

Background References

1. Broustas, C.G. and Lieberman, H.B. (2012) *J Cell Biochem* 113, 742-51.
2. Kai, M. (2013) *Biomolecules* 3, 75-84.
3. Bao, S. et al. (2004) *Oncogene* 23, 5586-93.
4. Ohashi, E. et al. (2014) *DNA Repair (Amst)* 21, 1-11.
5. Bai, H. et al. (2010) *DNA Repair (Amst)* 9, 478-87.
6. Karras, G.I. et al. (2013) *Mol Cell* 49, 536-46.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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