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UHRF1 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8846c

Product Information

Application	FC, IF, WB, E
Primary Accession	Q96T88
Reactivity	Human
Predicted	Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	89814
Antigen Region	229-257

Additional Information

Gene ID	29128
Other Names	E3 ubiquitin-protein ligase UHRF1, 632-, Inverted CCAAT box-binding protein of 90 kDa, Nuclear protein 95, Nuclear zinc finger protein Np95, HuNp95, hNp95, RING finger protein 106, Transcription factor ICBP90, Ubiquitin-like PHD and RING finger domain-containing protein 1, hUHRF1, Ubiquitin-like-containing PHD and RING finger domains protein 1, UHRF1, ICBP90, NP95, RNF106
Target/Specificity	This UHRF1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 229-257 amino acids from the Central region of human UHRF1.
Dilution	FC~~1:10~50 IF~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	UHRF1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UHRF1 {ECO:0000303|PubMed:17673620,

ECO:0000312|HGNC:HGNC:12556}

Function	E3 ubiquitin-protein ligase that acts as a key epigenetic regulator by bridging DNA methylation and chromatin modification (PubMed:10646863, PubMed:15009091, PubMed:19056828, PubMed:23022729, PubMed:24013172, PubMed:27595565, PubMed:30104358, PubMed:30392929, PubMed:30392931, PubMed:39607687). Plays a key role in DNA methylation inheritance by promoting recruitment of DNMT1 to hemimethylated DNA and ensure faithful propagation of the DNA methylation patterns through DNA replication (PubMed:23022729, PubMed:24013172, PubMed:27595565, PubMed:30104358, PubMed:30392929, PubMed:30392931, PubMed:39607687). Acts both as a histone reader and writer: specifically recognizes and binds (1) hemimethylated DNA at replication forks and (2) histone H3 trimethylated at 'Lys-9' and unmethylated at 'Arg-2' (H3K9me3 and H3R2me0, respectively), thereby activating its E3 ubiquitin-protein ligase activity (PubMed:15361834, PubMed:17673620, PubMed:17967883, PubMed:18772889, PubMed:21745816, PubMed:21777816, PubMed:22100450, PubMed:22837395, PubMed:23022729, PubMed:27595565, PubMed:30104358). UHRF1 then mediates histone H3 'Lys-18' monoubiquitination (H3K18ub), a docking site for DNMT1, leading to DNMT1 recruitment and replication- coupled DNA methylation maintenance (PubMed:27595565). Also mediates histone H3 'Lys-14' and 'Lys-23' ubiquitination (H3K14ub and H3K23ub) at lower level (PubMed:24013172, PubMed:27595565). Histone ubiquitin ligase activity also stimulates the methyltransferase activity of SUV39H1 and/or SUV39H2, promoting accumulation of H3K9me3 histone mark to reinformce heterochromatin state (PubMed:39631394). Enriched in pericentric heterochromatin where it recruits different chromatin modifiers required for this chromatin replication. Also localizes to euchromatic regions where it negatively regulates transcription possibly by impacting DNA methylation and histone modifications (PubMed:21777816). Plays a role in DNA repair by cooperating with UHRF2 to ensure recruitment of FANCD2 to interstrand cross-links (ICLs) leading to FANCD2 activation (PubMed:30335751). Also ubiquitinates non- histone proteins, such as histone H3, KIF11 and PML (PubMed:22945642, PubMed:37728657). Acts as a critical player of proper spindle architecture by catalyzing the 'Lys-63'-linked ubiquitination of KIF11, thereby controlling KIF11 localization on the spindle (PubMed:37728657).
Cellular Location	Nucleus {ECO:0000255|PROSITE-ProRule:PRU00358, ECO:0000269|PubMed:10646863, ECO:0000269|PubMed:17673620, ECO:0000269|PubMed:17967883, ECO:0000269|PubMed:19056828, ECO:0000269|PubMed:21777816, ECO:0000269|PubMed:30335751}. Chromosome Note=Associated with replicating DNA from early to late S phase, including at replicating pericentric heterochromatin (PubMed:17673620) Also localizes to euchromatic regions (PubMed:21777816). In non-S-phase cells, homogeneously distributed through the nucleus (By similarity) {ECO:0000250|UniProtKB:Q8VDF2, ECO:0000269|PubMed:17673620, ECO:0000269|PubMed:21777816}
Tissue Location	Expressed in thymus, bone marrow, testis, lung and heart. Overexpressed in breast cancer.

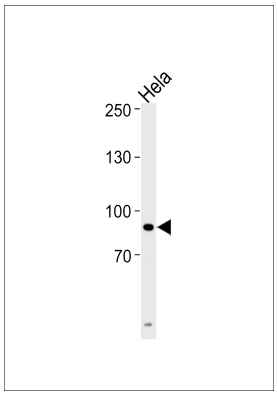
Background

UHRF1 is a member of a subfamily of RING-finger type E3 ubiquitin ligases. The protein binds to specific DNA sequences, and recruits a histone acetylase to regulate gene expression. Its expression peaks at late G1 phase and continues during G2 and M phases of the cell cycle. It plays a major role in the G1/S transition by regulating topoisomerase IIalpha and retinoblastoma gene expression, and functions in the p53-dependent DNA damage checkpoint.

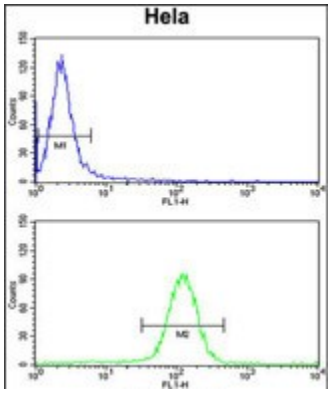
References

Achour,M.,et.al., Biochem. Biophys. Res. Commun. 390 (3), 523-528 (2009)

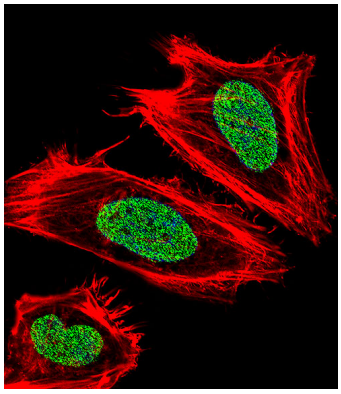
Images



UHRF1 Antibody (Center) (Cat. #AP8846c) western blot analysis in Hela cell line lysates (35ug/lane).This demonstrates the UHRF1 antibody detected the UHRF1 protein (arrow).



UHRF1 Antibody (Center) (Cat.#AP8846c) flow cytometry analysis of Hela cells (bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Fluorescent confocal image of Hela cell stained with UHRF1 Antibody (Center)(Cat#AP8846c).Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with UHRF1 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min). UHRF1 immunoreactivity is localized to Nucleus significantly.

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