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HLTF Rabbit mAb

Catalog # AP77050

Product Information

Application	WB, IHC-P, IF, ICC
Primary Accession	Q14527
Reactivity	Rat, Human
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Immunogen	A synthesized peptide derived from human HLTF
Purification	Affinity Purified
Calculated MW	113929

Additional Information

Gene ID	6596
Other Names	HLTF
Dilution	WB~~1/500-1/1000 IHC-P~~N/A IF~~1:50~200 ICC~~N/A
Format	Liquid in 10mM PBS, pH 7.4, 150mM sodium chloride, 0.05% BSA, 0.02% sodium azide and 50% glycerol.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	HLTF (HGNC:11099)
Function	Functions as a DNA-dependent ATPase and E3 ubiquitin-protein ligase involved in chromatin regulation and DNA damage tolerance (DDT) (PubMed:18316726, PubMed:18719106, PubMed:26051180, PubMed:31960921, PubMed:39142279, PubMed:40680746). Catalyzes 'Lys-63'-linked polyubiquitination of monoubiquitinated PCNA at 'Lys-164' in response to genotoxic stress, promoting error-free postreplication repair via template switching (PubMed:18316726, PubMed:18719106). Acts as an epigenetic regulator by promoting recruitment of DNMT1, thereby ensuring DNA methylation inheritance: specifically binds histone H3 trimethylated at 'Lys-9' (H3K9me3) and mediates histone H3 'Lys-23' polyubiquitination (H3K23ub), a docking site for DNMT1, leading to DNMT1 recruitment and replication-coupled DNA methylation maintenance (PubMed:40680746). Catalyzes formation of H3K23ub in two steps: first mediates monoubiquitination together with UBE2E1 and UBE2D2, and then extends

ubiquitin chains via 'Lys-63'-linked ubiquitination together with UBE2N and UBE2V2 (PubMed:40680746). Also acts as a chromatin redodeling factor, thereby regulating transcription (PubMed:10391891, PubMed:1994885, PubMed:9126292). Exhibits ATP-dependent double-stranded DNA (dsDNA) translocase activity but lacks classical helicase activity; mediates replication fork reversal by concertedly unwinding and annealing nascent and parental strands, thereby suppressing DNA synthesis and maintaining genomic stability (PubMed:1994885). Resolves G-quadruplex (G4) DNA structures in cooperation with MSH2, limiting replication stress and G4 accumulation across the cell cycle (PubMed:39142279). Contributes to nucleotide excision repair by evicting lesion-containing oligonucleotides using its HIRAN and ATPase domains (PubMed:26051180). Can displace single-stranded DNA from triplex structures through ATP-dependent dsDNA translocation (PubMed:26051180, PubMed:31960921). Also has protein clearing activity at the stalled replication fork, facilitating restart of DNA replication (PubMed:21795603).

Cellular Location Nucleus. Chromosome

Tissue Location Expressed in brain, heart, kidney, liver, lung, pancreas, placenta and skeletal muscle.

Images