10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

KD-Validated Anti-Helicase like transcription factor Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1239

Product Information

Application	WB, ICC
Primary Accession	Q14527
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB 2485
Calculated MW	113929
Gene Name	HLTF
Aliases	HLTF; Helicase Like Transcription Factor; HIP116A; RNF80; SMARCA3; SNF2L3; HLTF1; SWI/SNF Related, Matrix Associated, Actin Dependent Regulator Of Chromatin, Subfamily A, Member 3; SWI/SNF-Related Matrix-Associated Actin-Dependent Regulator Of Chromatin Subfamily A Member 3; RING-Type E3 Ubiquitin Transferase HLTF; Sucrose Nonfermenting Protein 2-Like 3; Helicase-Like Transcription Factor; RING Finger Protein 80; HIP116; ZBU1; DNA-Binding Protein/Plasminogen Activator Inhibitor-1 Regulator; DNA-Binding Protein/Plasminogen Activator Inhibitor 1 Regulator; Sucrose Nonfermenting-Like 3; SNF2-Like 3; EC 2.3.2.27; EC 3.6.4.-; EC 3.6.1
Immunogen	A synthesized peptide derived from human HLTF

Additional Information

Gene ID	6596
Other Names	Helicase-like transcription factor, 2.3.2.27, 3.6.4.-, DNA-binding protein/plasminogen activator inhibitor 1 regulator, HIP116, RING finger protein 80, RING-type E3 ubiquitin transferase HLTF, SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily A member 3, Sucrose nonfermenting protein 2-like 3, HLTF, HIP116A, RNF80, SMARCA3, SNF2L3, ZBU1

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.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.