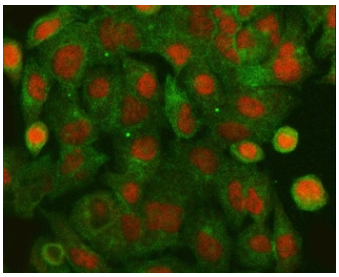
HLTF Antibody / Helicase-Like Transcription Factor Antibody (R32538)

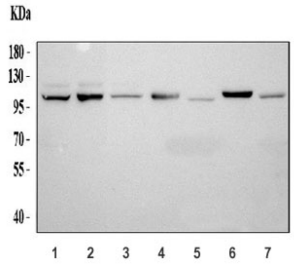
Catalog No.	Formulation	Size
R32538	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

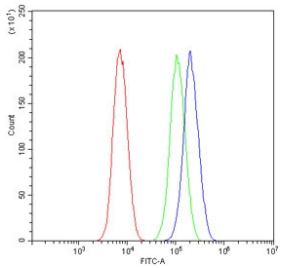
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
UniProt	Q14527
Localization	Nuclear
Applications	Western blot: 0.5-1ug Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This HLTF Antibody / Helicase-Like Transcription Factor Antibody is available for research use only.



HLTF Antibody IF in Human A549 Cells. Immunofluorescence staining of FFPE human A549 cells using the Helicase-Like Transcription Factor Antibody (red) and an alpha-tubulin monoclonal antibody (green). HLTF staining is predominantly nuclear, while alpha-tubulin highlights the surrounding cytoplasmic microtubule network. Heat-induced epitope retrieval was performed by steaming in citrate buffer (pH 6.0) for 20 minutes.



Western blot testing of 1) human HeLa, 2) human PANC1, 3) human A549, 4) rat heart, 5) rat kidney, 6) mouse heart and 7) mouse kidney tissue lysate with HLTF antibody at 0.5ug/ml. Predicted molecular weight: ~114 kDa.



Flow cytometry testing of PFA-fixed and permeabilized human Caco-2 cells with HLTF antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= HLTF antibody.

Description

HLTF Antibody / Helicase-Like Transcription Factor Antibody recognizes a multifunctional protein involved in DNA replication, chromatin regulation, and cellular responses to replication stress. Encoded by the HLTF gene and also known as SMARCA3, helicase-like transcription factor belongs to the SWI/SNF-related family of ATP-dependent DNA translocases. Its combination of DNA remodeling and ubiquitin ligase activities enables it to participate in pathways that preserve genome integrity when replication encounters damaged DNA or other obstacles.

During normal DNA replication, polymerases can stall at lesions that interfere with template copying. HLTF contributes to DNA damage tolerance by promoting the remodeling of stalled replication forks, allowing newly synthesized DNA strands to pair and form a reversed fork structure. This process can provide an alternative template for DNA synthesis and help prevent the accumulation of potentially harmful replication intermediates. HLTF contains a HIRAN domain that recognizes exposed 3' DNA ends, supporting its recruitment and activity at particular DNA structures associated with replication stress.

In addition to its DNA translocase function, HLTF possesses a RING-type E3 ubiquitin ligase domain that participates in the K63-linked polyubiquitination of proliferating cell nuclear antigen (PCNA). PCNA ubiquitination helps coordinate DNA damage tolerance pathways and influences the selection of mechanisms used to bypass replication-blocking lesions. HLTF works within a broader network of replication-associated proteins, including other ubiquitin ligases and factors involved in fork protection. Its activity helps integrate DNA structural remodeling with ubiquitin-dependent signaling during genome maintenance.

HLTF has also been investigated in cancer biology because its expression can be reduced through promoter hypermethylation in certain tumors. Epigenetic silencing of HLTF has been reported in colorectal and other cancers, suggesting that disruption of its genome maintenance functions may contribute to tumor-associated genomic instability. However, the consequences of altered HLTF expression depend on the molecular characteristics of individual tumors. Studies of HLTF continue to clarify how cells coordinate DNA replication, lesion bypass, and responses to genomic stress. NSJ Bioreagents offers this HLTF Antibody for investigating replication fork dynamics, PCNA regulation, and mechanisms that protect DNA integrity.

Explore our SMARCA3 Antibody 23H05 for an additional monoclonal antibody option targeting HLTF, with Western blot and immunohistochemistry validation.

Application Notes

Differences in protocols and secondary/substrate sensitivity may require the HLTF Antibody / Helicase-Like Transcription

Factor Antibody to be titrated for optimal performance.

Immunogen

Amino acids S911-L1009 from the human protein were used as the immunogen for the HLTF antibody.

Storage

After reconstitution, the HLTF antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

SMARCA3 antibody, HIP116 antibody, DNA helicase-like transcription factor antibody, Helicase-like transcription factor protein antibody

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