Product Name: KD-Validated DUT Recombinant Rabbit Monoclonal Antibody
Catalog #: KVAb01104
For research use only.

Summary

Description	KO&KD-Validated antibody
Host	Rabbit
Application	WB,FCM,ICC,IHC-P
Reactivity	Human
Conjugation	Unconjugated
Modification	Unmodified
Isotype	Rabbit IgG
Clonality	Rabbit mAb
Form	Liquid
Storage	Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.
Shipping	Ice bags
Buffer	Supplied in PBS (pH 7.4) containing 50% glycerol, and 0.02% sodium azide.
Purification	Affinity purification

Application

Dilution Ratio	WB 1:1,000-1:5,000; FC 1:200-1:2,000; ICC 1:100-1:1,000; IHC-P 1:100-1:200
Molecular Weight	Calculated MW: 26.6kDa

Antigen Information

Gene Name	DUT
Alternative Names	DUT; Deoxyuridine Triphosphatase; DUTP Pyrophosphatase; DUTPase; Deoxyuridine 5'-Triphosphate Nucleotidohydrolase, Mitochondrial; DUTP Diphosphatase; EC 3.6.1.23; DUTP Nucleotidohydrolase; DUTPASE; BMFDMS
Gene ID	1854.0
SwissProt ID	P33316
Immunogen	A synthesized peptide derived from human DUT

Background

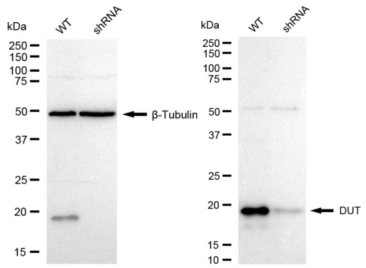
This gene encodes an essential enzyme of nucleotide metabolism. The encoded protein forms a ubiquitous, homotetrameric enzyme that hydrolyzes dUTP to dUMP and pyrophosphate. This reaction serves two cellular purposes: providing a precursor

(dUMP) for the synthesis of thymine nucleotides needed for DNA replication, and limiting intracellular pools of dUTP. Elevated levels of dUTP lead to increased incorporation of uracil into DNA, which induces extensive excision repair mediated by uracil glycosylase. This repair process, resulting in the removal and reincorporation of dUTP, is self-defeating and leads to DNA fragmentation and cell death. Alternative splicing of this gene leads to different isoforms that localize to either the mitochondrion or nucleus. A related pseudogene is located on chromosome 19. [provided by RefSeq, Jul 2008]

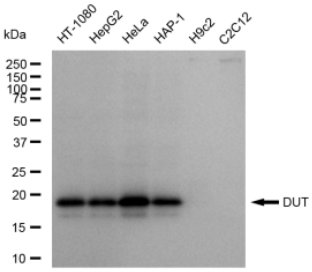
Research Area

Epigenetics and Nuclear Signaling

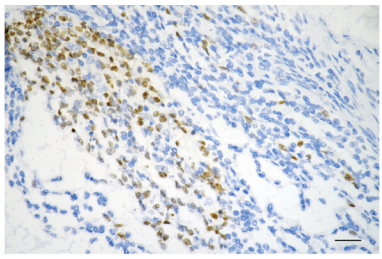
Image Data



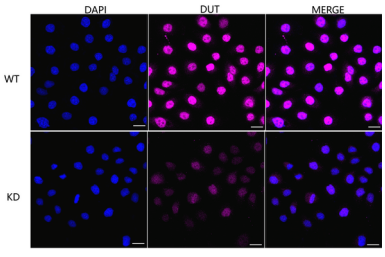
Western blotting analysis using DUT antibody (KVAb01104). DUT expression in wild type (WT) and DUT shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with DUT antibody (KVAb01104, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.



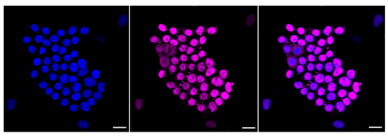
Western blotting analysis using DUT antibody (KVAb01104). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with DUT antibody (KVAb01104, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.



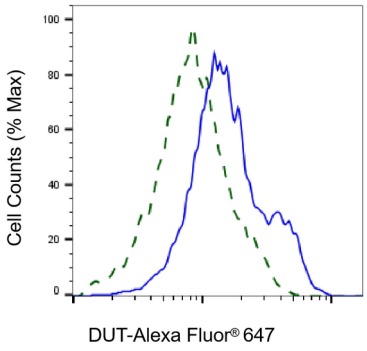
Immunohistochemistry was performed on paraffin-embedded human sigmoid colon carcinoma using DUT antibody (KVAb01104, 1:200). Antigen retrieval was done in sodium citrate buffer (pH 6.0). DAB was used for detection, with hematoxylin counterstaining. Images were acquired using a Nikon Ci-L Plus microscope (40× objective). Scale bar: 25 µm.



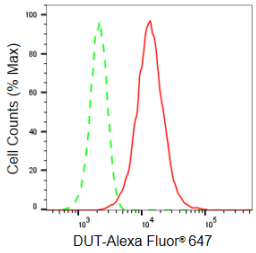
Immunocytochemical staining of HeLa cells using DUT antibody (KVAb01104, 1:1,000), Top panel: wild-type (WT); Bottom panal:DUT shRNA knockdown (KD). Nuclei were stained blue with DAPI;DUT was stained magenta with Alexa Fluor® 647. Scale bar, 20 µm. Permeabilization: Triton.



Immunocytochemical staining of Hela cells with DUT antibody (KVAb01104, 1:1,000) . Nuclei were stained blue with DAPI; DUT was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20 μm.



Validation of DUT knockdown using flow cytometry. Wild-type(WT, Blue) and knockdown(KD, Green) HeLa cells were stained with DUT antibody (KVAb01104, 1:2,000) and analyzed using BD flow cytometer.



Flow cytometric analysis of DUT expression in HeLa cells using DUT antibody (KVAb01104, 1:2,000). Green, isotype control; red, DUT.