Deoxyuridine 5'-Triphosphate Nucleotidohydrolase, Mitochondrial (DUT) ELISA Kit for Human

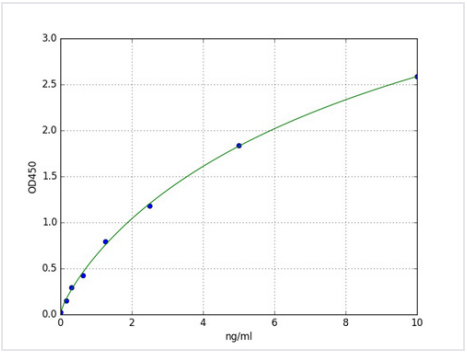
PRODUCT OVERVIEW

Product Name	Deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial (DUT), ELISA Kit
Full Product Name	Human Deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial ELISA Kit
Product Gene Name	DUT elisa kit
Product Synonym Names	DUT/dUTPase/dUTP pyrophosphatase
Species Reactivity	Human
Assay Type	Sandwich ELISA, Double Antibody
Samples	Serum, Plasma, Cell Culture Supernatant, cell or tissue lysate, Other liquid samples
Detection Range	0.156-10ng/ml
Sensitivity	0.094ng/ml
Preparation and Storage	Store entire kit at 2-8C for short-term. For longer-term, please store the microplate & standard at -20C, while the remaining reagents can be stored at 2-8C
Molecular Weight	17,748 Da
OMIM	601266
ISO Certification	Manufactured in an ISO 13485:2003 and EN ISO 13485:2012 Certified Laboratory.
Related Product Information for DUT elisa kit	Principle of the Assay||This kit was based on sandwich enzyme-linked immune-sorbent assay technology. Anti-Human DUT antibody was pre-coated onto 96-well plates. And the biotin conjugated anti-Human DUT antibody was used as detection antibodies. The standards, test samples and biotin conjugated detection antibody were added to the wells subsequently, and wash with wash buffer. HRPStreptavidin was added and unbound conjugates were washed away with wash buffer. TMB substrates were used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the Human DUT amount of sample captured in plate. Read the O.D. absorbance at 450nm in a microplate reader, and then the concentration of Human DUT can be calculated.
Other Notes	Small volumes of DUT elisa kit vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for DUT purchase	MBS762984 is a ready-to-use microwell, strip plate ELISA (enzyme-linked immunosorbent assay) Kit for analyzing the presence of the Deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial (DUT) ELISA Kit target analytes in biological samples. The concentration gradients of the kit standards or positive controls render a theoretical kit detection range in biological research samples containing DUT. The ELISA analytical biochemical technique of the MBS762984 kit is based on DUT antibody-DUT antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect DUT antigen targets in samples. The ELISA Kit is designed to detect native, not recombinant, DUT. Appropriate sample types may include undiluted body fluids and/or tissue homogenates, secretions. Quality control assays assessing reproducibility identified the intra-assay CV (%) and inter-assay CV(%).

Results of a typical standard run of a Human DUT ELISA Kit are shown below. This standard curve was generated at our lab for demonstration purpose only. Each user should obtain their own standard curve as per experiment. (N/A=not applicable)

X	ng/ml	0	0.156	0.313	0.625	1.25	2.5	5	10
Y	OD450	0.072	0.145	0.221	0.363	0.668	1.149	1.940	2.596

Typical Testing Data of DUT elisa kit



Typical Standard Curve of DUT elisa kit

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for DUT. It may not necessarily be applicable to this product.

NCBI GI #	70906441
NCBI GeneID	1854
NCBI Accession #	NP_001020419.1
UniProt Secondary Accession #	O14785; Q16708; Q16860; Q6FHN1; Q6NSA3; Q96Q81; A8K650; B4DPR5
UniProt Related Accession #	P33316
GenBank Nucleotide #	NM_001025248.1
NCBI Official Full Name	deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial isoform 1
NCBI Official Synonym Full Names	deoxyuridine triphosphatase
NCBI Official Symbol	DUT
NCBI Official Synonym Symbols	dUTPase
UniProt Protein Name	Deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial
UniProt Synonym Protein Names	dUTP pyrophosphatase
Protein Family	Deoxyuridine 5'-triphosphate nucleotidohydrolase
UniProt Gene Name	DUT
UniProt Synonym Gene Names	dUTPase
UniProt Entry Name	DUT_HUMAN
NCBI Protein Information	deoxyuridine 5'-triphosphate nucleotidohydrolase, mitochondrial
NCBI Summary for DUT	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]

UniProt Comments for DUT	dUTPase: This enzyme is involved in nucleotide metabolism: it produces dUMP, the immediate precursor of thymidine nucleotides and it decreases the intracellular concentration of dUTP so that uracil cannot be incorporated into DNA. Belongs to the dUTPase family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Hydrolase; DNA replication; Mitochondrial; Motility/polarity/chemotaxis; Nuclear receptor co-regulator; EC 3.6.1.23; Nucleotide Metabolism - pyrimidine Chromosomal Location of Human Ortholog: 15q21.1 Cellular Component: mitochondrion; nucleoplasm; nucleus Molecular Function: dUTP diphosphatase activity; magnesium ion binding; protein binding Biological Process: DNA replication; dUMP biosynthetic process; dUTP catabolic process; nucleobase, nucleoside and nucleotide metabolic process; nucleobase, nucleoside, nucleotide and nucleic acid metabolic process; pyrimidine base metabolic process; pyrimidine nucleoside biosynthetic process
Research Articles on DUT	**1.** Comparison of the cellular distribution of wild-type dUTPase with those of hyperphosphorylation- and hypophosphorylation-mimicking mutants suggests that phosphorylation at Ser11 leads to the exclusion of dUTPase from the nucleus.
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