

Pyrococcus Fruriosus Deoxyuridine Triphosphatase Active Protein | DUT active protein

Recombinant Pyrococcus Fruriosus Deoxyuridine Triphosphatase

CATALOG # AAA38252	HOST E Coli
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PRODUCT SYNONYMS

Pyrococcus Fruriosus Deoxyuridine Triphosphatase; Recombinant Pyrococcus Fruriosus Deoxyuridine Triphosphatase; DUT Pyrococcus Fruriosus; Thermostable dUTPase Pyrococcus Fruriosus Recombinant; Thermostable dUTPase; dUTPase; DUT active protein

PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	Greater than 97.0% as determined by SDS-PAGE.
Form/Format	dUTPase is supplied in 20mM Tris-HCl (pH 8.2), 1mM DTT, 0.1mM EDTA, 100mM KCl, 0.1% Nonidet P40, 0.1% Tween 20 and 50% glycerol at a concentration of 10U/ ul of the enzyme. Sterile filtered liquid formulation.
Sequence Length	376
Unit Definition	One unit of enzyme catalyzes hadrylization of 10 nanomoles of dUTP to dUMP in one hour at 85 Centigrade.
Specific Activity	10 ³ u/ug.
Activity	(A) Measured by its ability to hydrolyze dUTP to dUMP in reaction buffer 20mM Hepes pH7.5, 150mM KCl, 5mM MgCl ₂ , 10mM dUTP at 85 Centigrade for 1 hour. The PPI production was quantified by using the enzymatic determination kit from Sigma.(B) Enhancing PCR amplification: 50ul of Pfu PCR reaction system with 1-3u of dUTPase (<3.0kb) or 4-6u dUTPase (>3.0kb) to amplify genomic DNA target up to 15-19 kb in length. (High concentrations of dUTPase will inhibit PCR reaction!)
Preparation and Storage	Store at 4 degree C if entire vial will be used within 2-4 weeks. Store, frozen at -20 degree C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).Avoid multiple freeze-thaw cycles.

ADDITIONAL INFORMATION

Related Product Information for DUT active protein	Description: Thermostable dUTPase (pyrococcus fruriosus) maximizes the efficiency of high-fidelity PCR (using proofreading DNA polymerases). It removes contaminating dUTP present in PCR reactions and dNTP solutions. The presence of dUTPase in a proofreading DNA polymerase reaction can prevent dUTP misincorporation by maintaining dUTP levels below their inhibitory concentrations despite the constant generation of the molecule by the spontaneous deamination of dCTP. The incorporation of dUTP into PCR products causes mutations within the amplified product, proofreading polymerases to stall and slows down non-proofreading polymerases such as Taq. The dUTPase increase in PCR product yield, length and fidelity enables further down-stream applications. These effects make dUTPase useful in PCR fidelity and yield-sensitive applications such as cloning and subsequent recombinant protein technology, and gene expression analysis (semi-quantitative RT-PCR techniques and real-time PCR analysis), where small differences in product accumulation can have a significant impact on gene expression analysis. dUTPase is specific for dUTP and is critical for the fidelity of DNA replication and repair. dUTPase hydrolyzes dUTP to dUMP and pyrophosphate, simultaneously reducing dUTP levels and providing the dUMP for dTTP biosynthesis.
Product Categories/Family for DUT active protein	Enzymes; Phosphatase

NCBI AND UNIPROT INFORMATION

NCBI GI #	1169439
Molecular Weight	43,398 Da
NCBI Official Full Name	Deoxyuridine 5'-triphosphate nucleotidohydrolase
UniProt Protein Name	Deoxyuridine 5'-triphosphate nucleotidohydrolase
UniProt Gene Name	U45
UniProt Synonym Gene Names	BHLF3; dUTPase
UniProt Entry Name	DUT_HHV6U

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/e-coli-dut-active-protein/pyrococcus-fruriosus-deoxyuridine-triphosphatase/38252>