Datasheet for ABIN7563443

POLG Protein (AA 1-1218) (His tag)

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Overview

Quantity:	1 mg
Target:	POLG
Protein Characteristics:	AA 1-1218
Origin:	Mouse
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This POLG protein is labelled with His tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB)

Product Details

Purpose:	Custom-made recombinat Polg Protein expressed in mammalien cells.
Sequence:	MSRLLWKKVA GAKVASGPVP ATARWVASSV LDPVPSDGRP PSQMPSSENG QLRLNPLLIQ MLSRGLHEQI FGCGGEMPDE AAVQRSVEHL QKHGLWGQPA TPLPDVELRL PRLFGGNLDQ HFRLLAQKQS LPYLEAAASL LEAQLPPEPK SWAWAEGWTR YGPEGEAEPV AIPEERALVF DVEVCLAEGT CPTLAVAISP SAWYSWCSRR LVEERYSWTS QLSPADLIPL GGSTSASSST KQDGQEQLVV GHNVSFDRAH IREQYLIQDS RMRFLDTMSM HMAISGLSSF QRSLWMGAKQ GKHKNPAAHK ARAEVPEESQ WSSESSSWDW MDISSANNLA DVHNLYVGGP PLEKEPRELF VKGSMRDIRE NFQDLMQYCA RDVWATFEVF QQQLPLFLER CPHPVTLAGM LEMGVSYLPV NQNWERYLTE AQNTYEELQR EMKKSLMDLA NDACQLLSGE RYKEDPWLWD LEWDLQEFKQ KKAKKVKKPA SASKLPIEGA GPFGDPMDQE DPGPPSEEEE LQRSVTAHNR LQQLRSTTDL LPKRPQHLPG HPGWYRQLCP RLDDPAWAPG PSLLSLQMRV TPKLMALTWD GFPLHYSDSH GWGYLVPGRR DNLTEPPVSP TVESAAVTCP YRAIESLYRK HCLEQGKQQL EPQEVDLAEE

Product Details

	FLLTDNSAMW QTVEELGCLD VEAEAKMENS GLSQPLVLPA ACAPKSSQPT YHHGNGPYND VNIPGCWFFK LPHKDGNNYN VGSPFAKDFL PKMEDGTLQA GPGGASGPRA LEINKMISFW RNAHKRISSQ MVVWLPRSAL PRVVTRHPAF DEEGHYGAIL PQVVTAGTIT RRAVEPTWLT ASNARPDRVG SELKAMVQAP PGYVLVGADV DSQELWIAAV LGDAHFAGMH GCTAFGWMTL QGRKSRGTDL HSKTAATVGI SREHAKIFNY GRIYGAGQSF AERLLMQFNH RLTRQEAAEK AQQMYAVTKG LRRYRLSADG EWLVKQLNLP VDRTEDGWVS LQDLRMIRRE ASRKSRWKKW EVAAERAWTG GTESEMFNKL ESIAMSDTPR TPVLGCCISR ALEPSVVQGE FITSRVNWVV QSSAVDYLHL MLVAMKWLFE EFAIDGRFCI SIHDEVRYLV REEDRYRAAL ALQITNLLTR CMFAYKLGLN DLPQSVAFFS AVDIDQCLRK EVTMDCKTPS NPTGMERRYG IPQGEALDIY QIIELTKGSL EKRSQPGP **Sequence without tag. The proposed Purification-Tag is based on experiences with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.**
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts. • Protein expressed in mammalien cells and purified in one-step affinity chromatography • The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins. • State-of-the-art algorithm used for plasmid design (Gene synthesis). This protein is a made-to-order protein and will be made for the first time for your order. Our experts in the lab try to ensure that you receive soluble protein. If you are not interested in a full length protein, please contact us for individual protein fragments. The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.
Purity:	> 90 % as determined by Bis-Tris Page, Western Blot
Grade:	custom-made

Target Details

Target:	POLG
Alternative Name:	Polg (POLG Products)
Target Type:	Viral Protein

Target Details

Background:	DNA polymerase subunit gamma-1 (EC 2.7.7.7) (3'-5' exodeoxyribonuclease) (EC 3.1.11.-) (5'-deoxyribose-phosphate lyase) (EC 4.2.99.-) (Mitochondrial DNA polymerase catalytic subunit) (PolG-alpha) (PolgA),FUNCTION: Catalytic subunit of DNA polymerase gamma solely responsible for replication of mitochondrial DNA (mtDNA). Replicates both heavy and light strands of the circular mtDNA genome using a single-stranded DNA template, RNA primers and the four deoxyribonucleoside triphosphates as substrates (PubMed:26095671) (By similarity). Has 5' -> 3' polymerase activity. Functionally interacts with TWNK and SSBP1 at the replication fork to form a highly processive replisome, where TWNK unwinds the double-stranded DNA template prior to replication and SSBP1 covers the parental heavy strand to enable continuous replication of the entire mitochondrial genome. A single nucleotide incorporation cycle includes binding of the incoming nucleotide at the insertion site, a phosphodiester bond formation reaction that extends the 3'-end of the primer DNA, and translocation of the primer terminus to the post-insertion site. After completing replication of a mtDNA strand, mediates 3' -> 5' exonucleolytic degradation at the nick to enable proper ligation (PubMed:26095671) (By similarity). Highly accurate due to high nucleotide selectivity and 3' -> 5' exonucleolytic proofreading. Proficiently corrects base substitutions, single-base additions and deletions in non-repetitive sequences and short repeats, but displays lower proofreading activity when replicating longer homopolymeric stretches. Exerts exonuclease activity toward single-stranded DNA and double-stranded DNA containing 3'-terminal mispairs. When a misincorporation occurs, transitions from replication to a pro-nucleolytic editing mode and removes the missincorporated nucleoside in the exonuclease active site. Proceeds via an SN2 nucleolytic mechanism in which Asp-198 catalyzes phosphodiester bond hydrolysis and Glu-200 stabilizes the leaving group. As a result the primer strand becomes one nucleotide shorter and is positioned in the post-insertion site, ready to resume DNA synthesis (PubMed:15164064, PubMed:26095671) (By similarity). Exerts 5'-deoxyribose phosphate (dRP) lyase activity and mediates repair-associated mtDNA synthesis (gap filling) in base-excision repair pathway. Catalyzes the release of the 5'-terminal 2-deoxyribose-5-phosphate sugar moiety from incised apurinic/apyrimidinic (AP) sites to produce a substrate for DNA ligase. The dRP lyase reaction does not require divalent metal ions and likely proceeds via a Schiff base intermediate in a beta-elimination reaction mechanism (By similarity). {ECO:0000250|UniProtKB:P54098, ECO:0000269|PubMed:15164064, ECO:0000269|PubMed:26095671}.
Molecular Weight:	136.8 kDa
UniProt:	P54099

Application Details

Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months