Datasheet for ABIN3092149

POLG Protein (AA 1-1239) (Strep Tag)

Go to Product page

Overview

Quantity:	250 µg
Target:	POLG
Protein Characteristics:	AA 1-1239
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This POLG protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

Product Details

Brand:	AliCE®
Sequence:	MSRLLWRKVA GATVGPGPVP APGRWVSSSV PASDPSDGQR RRQQQQQQQQ QQQQQPQQPQ VLSSEGGQLR HNPLDIQMLS RGLHEQIFGQ GGEMPGEAAV RRSVEHLQKH GLWGQPAVPL PDVELRLPPL YGDNLDQHFR LLAQKQSLPY LEAANLLLQA QLPPKPPAWA WAEGWTRYGP EGEAVPVAIP EERALVFDVE VCLAEGTCPT LAVAISPSAW YSWCSQRLVE ERYSWTSQLS PADLIPLEVP TGASSPTQRD WQEQLVVGHN VSFDRAHIRE QYLIQGSRMR FLDTMSMHMA ISGLSSFQRS LWIAAKQGKH KVQPPTKQGQ KSQRKARRGP AISSWDWLDI SSVNSLAEVH RLYVGGPPLE KEPRELFVKG TMKDIRENFQ DLMQYCAQDV WATHEVFQQQ LPLFLERCPH PVTLAGMLEM GVSYLPVNQN WERYLAEAQG TYEELQREMK KSLMDLANDA CQLLSGERYK EDPWLWDLEW DLQEFKQKKA KKVKKEPATA SKLPIEGAGA PGDPMDQEDL GPCSEEEEFQ QDVMARACLQ KLKGTTELLP KRPQHLPGHP GWYRKLCPRL DDPAWTPGPS LLSLQMRVTP KLMALTWDGF PLHYSERHGW GYLVPGRRDN LAKLPTGTTL ESAGVVCPYR AIESLYRKHC

LEQGKQQLMP QEAGLAEEFL LTDNSAIWQT VEELDYLEVE AEAKMENLRA AVPGQPLALT ARGGPKDTQP SYHHGNGPYN DVDIPGCWFF KLPHKDGNSC NVGSPFAKDF LPKMEDGTLQ AGPGGASGPR ALEINKMISF WRNAHKRISS QMVVWLPRSA LPRAVIRHPD YDEEGLYGAI LPQVVTAGTI TRRAVEPTWL TASNARPDRV GSELKAMVQA PPGYTLVGAD VDSQELWIAA VLGDAHFAGM HGCTAFGWMT LQGRKSRGTD LHSKTATTVG ISREHAKIFN YGRIYGAGQP FAERLLMQFN HRLTQQEAAE KAQQMYAATK GLRWYRLSDE GEWLVRELNL PVDRTEGGWI SLQDLRKVQR ETARKSQWKK WEVVAERAWK GGTESEMFNK LESIATSDIP RTPVLGCCIS RALEPSAVQE EFMTSRVNWV VQSSAVDYLH LMLVAMKWLF EEFAIDGRFC ISIHDEVRYL VREEDRYRAA LALQITNLLT RCMFAYKLGL NDLPQSVAFF SAVDIDRCLR KEVTMDCKTP SNPTGMERRY GIPQGEALDI YQIIELTKGS LEKRSQPGP

Sequence without tag. The proposed Strep-Tag is based on experience s 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 in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified in one-step affinity chromatography
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- 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.

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.

Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Product Details

	Concentration: • The concentration of our recombinant proteins is measured using the absorbance at 280nm. • The protein's absorbance will be measured against its specific reference buffer. • We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.
Purification:	One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (AliCE®).
Purity:	> 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).
Grade:	custom-made

Target Details

Target:	POLG
Alternative Name:	POLG (POLG Products)
Target Type:	Viral Protein
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),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:9558343, PubMed:11477093, PubMed:19837034, PubMed:11897778, PubMed:15917273). 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:9558343, PubMed:11477093, PubMed:15167897, PubMed:26095671, PubMed:19837034, PubMed:11897778, PubMed:15917273). 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

Target Details

	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:10827171, PubMed:11477094, PubMed:11504725, PubMed:37202477). 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 (PubMed:9770471). {ECO:0000269|PubMed:10827171, ECO:0000269|PubMed:11477093, ECO:0000269|PubMed:11477094, ECO:0000269|PubMed:11504725, ECO:0000269|PubMed:11897778, ECO:0000269|PubMed:15167897, ECO:0000269|PubMed:15917273, ECO:0000269|PubMed:19837034, ECO:0000269|PubMed:26095671, ECO:0000269|PubMed:37202477, ECO:0000269|PubMed:9558343, ECO:0000269|PubMed:9770471}.
Molecular Weight:	139.6 kDa
UniProt:	P54098

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.
Comment:	ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications. During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional

Application Details

	components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol **Might differ depending on protein.**
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months