

Datasheet for ABIN3092192

**POLA1 Protein (AA 1-1462) (Strep Tag)**

1 Image

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## Overview

Quantity:	1 mg
Target:	POLA1
Protein Characteristics:	AA 1-1462
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This POLA1 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

## Product Details

Sequence:	MAPVHGDDSL SDGSFVSSR ARREKSKKG RQEALERLKK AKAGEKYKYE VEDFTGVYEE VDEEQYSKLV QARQDDDWIV DDDGIGYVED GREIFDDDL DDALDADEKG KDGKARNKDK RNVKKLAVTK PNNIKSMFIA CAGKKTADKA VDLSKDGLLG DILQDLNTET PQITPPVMI LKKKRSIGAS PNPFSVHTAT AVPSGKIASP VSRKEPPLTP VPLKRAEFAG DDVQVESTEE EQESGAMEFE DGDFDEPMEV EEVDLEPMAA KAWDKESPA EEVKQADSG KGTVSYLGSF LPDVSCWDID QEGDSSFVSQ EVQVDSSHLP LVKGADEEQV FHFYWLDAYE DQYNQPGVVF LFGKVVIESA ETHVSCCMV KNIERTLYFL PREMIDLNT GKETGTPISM KDVEEFDEK IATKYKIMKF KSKPVEKNYA FEIPDVPEKS EYLEVKYSAE MPQLPQDLKG ETFSHVFGTN TSSLELFLMN RKIKGPCWLE VKSPQLLNQP VSWCKVEAMA LKPDLVNVIK DVSPPLVVM AFSMKTMQNA KNHQNEIAM AALVHHSFAL DKAAPKPPFQ SHFCVSKPK DCIFPYAFKE VIEKKNVKE VAATERTLLG FFLAKVHKID PDIIVGHNIY GFELEVLLQR INVCKAPHWS KIGRLKRSNM PKLGGRSGFG ERNATCGRMI CDVEISAKEL IRCKSYHLSE LVQQLKTER
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VVIPMENIQN MYSESSQLLY LLEHTWKDAK FILQIMCELN VLPLALQITN IAGNIMSRTL  
MGGRSERNEF LLLHAFYENN YIVPDKQIFR KPQQKLGDED EEIDGDTNKY KKGRKKAAYA  
GGLVLDPKVG FYDKFILLLD FNSLYPSIIQ EFNICFTTVQ RVASEAQKVT EDGEQEIQPE  
LPDPSLEMGI LPREIRKLVE RRKQVKQLMK QQDLNPDIL QYDIRQKALK LTANSMYGCL  
GFSYSRFYAK PLAALVTYKG REILMHTKEM VQKMNLEVIY GDTDSIMINT NSTNLEEVFK  
LGNKVKSEVN KLYKLEIDI DGVFKSLLLL KKKKYAALVV EPTSDGNYVT KQELKGLDIV  
RRDWCDLAKD TGNFVIGQIL SDQSRDTIVE NIQKRLIEIG ENVLNGSVPV SQFEINKALT  
KDPQDYPDKK SLPHVHVALW INSQGGRKVK AGDTVSYVIC QDGSNLTASQ RAYAPEQLQK  
QDNLTIDTQY YLAQQIHPVV ARICEPIDGI DAVLIATWLG LDPTQFRVHH YHKDEENDAL  
LGGPAQLTDE EKYRDCERFK CPCPTCGTEN IYDNVFDGSG TDMEPSLYRC SNIDCKASPL  
TFTVQLSNKL IMDIRRFIKK YYDGWLICEE PTCRNTRHL PLQFSRTGPL CPACMKATLQ  
PEYSDKSLYT QLCFYRYIFD AECALEKLT DHEKDKLKKQ FFTPKVLQDY RKLKNTAEQF  
LSRSGYSEVN LSKLFAGCAV KS

**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 by multi-step, protein-specific process to ensure correct folding and modification.
- 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 will ensure that you receive a correctly folded 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

Product Details

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!

Concentration:

- The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.

Purification:	Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):  1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE. 2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.
Purity:	>80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Endotoxin Level:	Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)
Grade:	Crystallography grade

Target Details

Target:	POLA1
Alternative Name:	POLA1 (POLA1 Products)
Background:	DNA polymerase alpha catalytic subunit (EC 2.7.7.7) (DNA polymerase alpha catalytic subunit p180),FUNCTION: Catalytic subunit of the DNA polymerase alpha complex (also known as the alpha DNA polymerase-primase complex) which plays an essential role in the initiation of DNA synthesis. During the S phase of the cell cycle, the DNA polymerase alpha complex (composed of a catalytic subunit POLA1, a regulatory subunit POLA2 and two primase subunits PRIM1 and PRIM2) is recruited to DNA at the replicative forks via direct interactions with MCM10 and WDHD1. The primase subunit of the polymerase alpha complex initiates DNA synthesis by oligomerising short RNA primers on both leading and lagging strands. These primers are

## Target Details

initially extended by the polymerase alpha catalytic subunit and subsequently transferred to polymerase delta and polymerase epsilon for processive synthesis on the lagging and leading strand, respectively. The reason this transfer occurs is because the polymerase alpha has limited processivity and lacks intrinsic 3' exonuclease activity for proofreading error, and therefore is not well suited for replicating long complexes. In the cytosol, responsible for a substantial proportion of the physiological concentration of cytosolic RNA:DNA hybrids, which are necessary to prevent spontaneous activation of type I interferon responses (PubMed:27019227). {ECO:0000269|PubMed:26975377, ECO:0000269|PubMed:27019227, ECO:0000269|PubMed:31006512, ECO:0000269|PubMed:9518481}.

Molecular Weight: 165.9 kDa

UniProt: [P09884](#)

Pathways: [SARS-CoV-2 Protein Interactome](#)

## 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 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. If you have a special request, please contact us.

## Handling

Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

## Images



**Image 1.** „Crystallography Grade“ protein due to multi-step, protein-specific purification process