

Datasheet for ABIN3095091

POLR3A Protein (AA 1-1390) (Strep Tag)



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1 Image

Overview

Quantity:	1 mg
Target:	POLR3A
Protein Characteristics:	AA 1-1390
Origin:	Human
Source:	Tobacco (<i>Nicotiana tabacum</i>)
Protein Type:	Recombinant
Purification tag / Conjugate:	This POLR3A protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

Product Details

Sequence: MVKEQFRETD VAKKISHICF GMKSPEEMRQ QAHIQVVSKN LYSQDNQHAP LLYGVLDHRM
GTSEKDRPCE TCGKNLADCL GHYGYIDLEL PCFHVGYFRA VIGILQMICK TCCHIMLSQE
EKKQFLDYLK RPGLTYLQKR GLKKKISDKC RKKKNICHHCG AFNGTVKKCG LLKIIHEKYK
TNKKVVDPIV SNFLQSFETA IEHNKEVEPL LGRAQENLNP LVVLNLFKRI PAEDVPLLLM
NPEAGKPSDL ILTRLLVPPL CIRPSVSDL KSGTNEDDLT MKLTEIIFLN DVIKKHRISG
AKTQMIMEDW DFLQLQCALY INSELSGIPL NMAPKKWTRG FVQRLKGGKQG RFRGNLSGKR
VDFSGRTVIS PDPNLRIDEV AVPVHVAKIL TFPEKVNKAN INFLRKLQVN GPEVHPGANF
IQQRHTQMKR FLKYGNREKM AQELKYGDIV ERHLIDGDVV LFNRRQPSLHK LSIMAHLARV
KPHRTFRFNE CVCTPYNADF DGDEMNLHLP QTEEAKAEAL VLMGTKANLV TPRNGEPLIA
AIQDFLTGAY LLTLKDTFFD RAKACQIIAS ILVGKDEKIK VRLPPPTILK PVTLWTGKQI
FSVILRPSDD NPVRANLRK GKQYCGKGED LCANDSYVTI QNSELMSGSM DKGTLGSGSK
NNIFYILLRD WGQNEAADAM SRLARLAPVY LSNRGSFSIGI GDVTPGQGLL KAKYELLNAG

YKKCDEYIEA LNTGKLQQQP GCTAETLEA LILKELSVIR DHAGSACLRE LDKSNSPLTM
ALCGSKGSFI NISQMIACVG QQAISGSRVP DGFENRSLPH FEKHSKLPAK KGFVANSFYS
GLTPTEFFFH TMAGREGLVD TAVKTAETGY MQRRLVKSLE DLCSQYDLTV RSSTGDIIQF
IYGGDGLDPA AMEGKDEPLE FKRVLNKA VFPCSEPAL SKNELITTE SIMKKSEFLC
CQDSFLQEI KFIKGVSEKI KKTRDKYGIN DNGTTEPRVL YQLDRITPTQ VEKFLCETCRD
KYMRAQMEPG SAVGALCAQS IGEPGTQMTL KTFHFAGVAS MNITLGVPRI KEIINASKAI
STPIITAQLD KDDDADYARL VKGRIEKTLL GEISEYIEEV FLPDDCFILV KLSLERIRLL RLEVNAETVR
YSICTSKLRV KPGDVAHVGE AVVCVTPREN SKSSMYVVLQ FLKEDLPKVV VQGIPEVSRA
VIHIDEQSGK EKYKLLVEGD NLRVAVMATHG VKGTRTTSNN TYEVEKTLGI EAARTTIINE
IQYTMVNHGM SIDRRHVMLL SDLMTYKGEV LGITRFGGLAK MKESVLMAS FEKTADHLFD
AAYFGQKDSV CGVSECIIMG IPMNIGTGLF KLLHKADRP NPPKRPLIFD TNEFHIPLVT

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 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

Product Details

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:	POLR3A
Alternative Name:	POLR3A (POLR3A Products)
Background:	DNA-directed RNA polymerase III subunit RPC1 (RNA polymerase III subunit C1) (EC 2.7.7.6) (DNA-directed RNA polymerase III largest subunit) (DNA-directed RNA polymerase III subunit A) (RNA polymerase III 155 kDa subunit) (RPC155) (RNA polymerase III subunit C160),FUNCTION: Catalytic core component of RNA polymerase III (Pol III), a DNA-dependent RNA polymerase which synthesizes small non-coding RNAs using the four ribonucleoside triphosphates as substrates. Synthesizes 5S rRNA, snRNAs, tRNAs and miRNAs from at least 500 distinct genomic loci (PubMed:9331371, PubMed:20413673, PubMed:33558766, PubMed:35637192, PubMed:19609254, PubMed:19631370, PubMed:33335104, PubMed:34675218, PubMed:33558764). Pol III-mediated transcription cycle proceeds through transcription initiation, transcription elongation and transcription termination stages. During transcription initiation, Pol III is recruited to DNA promoters type I, II or III with the help of general

Target Details

transcription factors and other specific initiation factors. Once the polymerase has escaped from the promoter it enters the elongation phase during which RNA is actively polymerized, based on complementarity with the template DNA strand. Transcription termination involves the release of the RNA transcript and polymerase from the DNA (PubMed:20413673, PubMed:33335104, PubMed:33674783, PubMed:34675218, PubMed:33558764, PubMed:33558766). Forms Pol III active center together with the second largest subunit POLR3B/RPC2. Appends one nucleotide at a time to the 3' end of the nascent RNA, with POLR3A/RPC1 contributing a Mg(2+)-coordinating DxDGD motif, and POLR3B/RPC2 participating in the coordination of a second Mg(2+) ion and providing lysine residues believed to facilitate Watson-Crick base pairing between the incoming nucleotide and template base. Typically, Mg(2+) ions direct a 5' nucleoside triphosphate to form a phosphodiester bond with the 3' hydroxyl of the preceding nucleotide of the nascent RNA, with the elimination of pyrophosphate (PubMed:9331371, PubMed:19609254, PubMed:33335104, PubMed:33674783, PubMed:34675218, PubMed:33558764, PubMed:20413673). Pol III plays a key role in sensing and limiting infection by intracellular bacteria and DNA viruses. Acts as a nuclear and cytosolic DNA sensor involved in innate immune response. Can sense non-self dsDNA that serves as template for transcription into dsRNA. The non-self RNA polymerase III transcripts, such as Epstein-Barr virus-encoded RNAs (EBERs) induce type I interferon and NF-kappa-B through the RIG-I pathway. {ECO:0000250, ECO:0000269|PubMed:19609254, ECO:0000269|PubMed:19631370, ECO:0000269|PubMed:20413673, ECO:0000269|PubMed:33335104, ECO:0000269|PubMed:33558764, ECO:0000269|PubMed:33558766, ECO:0000269|PubMed:33674783, ECO:0000269|PubMed:34675218, ECO:0000269|PubMed:35637192, ECO:0000269|PubMed:9331371}.

Molecular Weight: 155.6 kDa

UniProt: [O14802](#)

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

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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 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