Datasheet for ABIN3095076

POLR1B Protein (AA 1-1135) (Strep Tag)

1 Image

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Overview

Quantity:	1 mg
Target:	POLR1B
Protein Characteristics:	AA 1-1135
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This POLR1B protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Sequence:	MDPGSRWRNL PSGPSLKHLT DPSYGIPREQ QKAALQELTR AHVESFNYAV HEGLGLAVQA IPPFEFAFKD ERISFTILDA VISPPTVPKG TICKEANVYP AECRGRRSTY RGKLTADINW AVNGISKGII KQFLGYVPIM VKSKLCNLRN LPPQALIEHH EEAEEMGGYF IINGIEKVIR MLIMPRRNFP IAMIRPKWKT RGPGYTQYGV SMHCVREEHS AVNMNLHYLE NGTVMLNFIY RKELFFLPLG FALKALVSFS DYQIFQELIK GKEDDSFLRN SVSQMLRIVM EEGCSTQKQV LNYLGECFRV KLNVPDWYPN EQAAEFLFNQ CICIHLKSNT EKFYMLCLMT RKLFALAKGE CMEDNPDSLV NQEVLTPGQL FLMFLKEKLE GWLVSIKIAF DKKAQKTSVS MNTDNLMRIF TMGIDLTKPF EYLFATGNLR SKTGLGLLQD SGLCVVADKL NFIRYLSHFR CVHRGADFAK MRTTTVRRLL PESWGFLCPV HTPDGEPCGL MNHLTAVCEV VTQFVYTASI PALLCNLGVT PIDGAPHRSY SECYPVLLDG VMVGWVDKDL APGIADSLRH FKVLREKRIP PWMEVVLIPM TGKPSLYPGL FLFTTPCRLV RPVQNLALGK EELIGTMEQI FMNVAIFEDE VFAGVTTHQE LFPHSLLSVI ANFIPFSDHN QSPRNMYQCQ MGKQTMGFPL LTYQDRSDNK LYRLQTPQSP

LVRPSMYDYY DMDNYPIGTN AIVAVISYTG YDMEDAMIVN KASWERGFAH GSVYKSEFID LSEKIKQGDS SLVFGIKPGD PRVLQKLDDD GLPFIGAKLQ YGDPYYSYLN LNTGESFVMY YKSKENCVVD NIKVCSNDTG SGKFKCVCIT MRVPRNPTIG DKFASRHGQK GILSRLWPAE DMPFTESGMV PDILFNPHGF PSRMTIGMLI ESMAGKSAAL HGLCHDATPF IFSEENSALE YFGEMLKAAG YNFYGTERLY SGISGLELEA DIFIGVVYYQ RLRHMVSDKF QVRTTGARDR VTNQPIGGRN VQGGIRFGEM ERDALLAHGT SFLLHDRLFN CSDRSVAHVC VKCGSLLSPL LEKPPPSWSA MRNRKYNCTL CSRSDTIDTV SVPYVFRYFV AELAAMNIKV KLDVV

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 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:

Product Details

- 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:	POLR1B
Alternative Name:	POLR1B (POLR1B Products)
Background:	DNA-directed RNA polymerase I subunit RPA2 (RNA polymerase I subunit 2) (EC 2.7.7.6) (DNA-directed RNA polymerase I 135 kDa polypeptide) (RPA135),FUNCTION: Catalytic core component of RNA polymerase I (Pol I), a DNA-dependent RNA polymerase which synthesizes ribosomal RNA precursors using the four ribonucleoside triphosphates as substrates. Transcribes 47S pre-rRNAs from multicopy rRNA gene clusters, giving rise to 5.8S, 18S and 28S ribosomal RNAs (PubMed:34671025, PubMed:34887565, PubMed:36271492, PubMed:11250903, PubMed:11283244, PubMed:16858408). Pol I-mediated transcription cycle proceeds through transcription initiation, transcription elongation and transcription termination stages. During transcription initiation, Pol I pre-initiation complex (PIC) is recruited by the selectivity factor 1 (SL1/TIF-IB) complex bound to the core promoter that precedes an rDNA repeat unit. The PIC assembly bends the promoter favoring the formation of the transcription bubble and promoter escape. 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. Highly processive, assembles in structures referred to as 'Miller trees' where many elongating Pol I complexes queue and transcribe the same rDNA coding regions.

Target Details

	At terminator sequences downstream of the rDNA gene, PTRF interacts with Pol I and halts Pol I transcription leading to the release of the RNA transcript and polymerase from the DNA (PubMed:34671025, PubMed:34887565, PubMed:36271492, PubMed:11250903, PubMed:11283244, PubMed:16858408). Forms Pol I active center together with the largest subunit POLR1A/RPA1. Appends one nucleotide at a time to the 3' end of the nascent RNA, with POLR1A/RPA1 contributing a Mg(2+)-coordinating DxDGD motif, and POLR1B/RPA2 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 the 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. Has proofreading activity: Pauses and backtracks to allow the cleavage of a missincorporated nucleotide via POLR1H/RPA12. High Pol I processivity is associated with decreased transcription fidelity (PubMed:34671025, PubMed:34887565, PubMed:36271492, PubMed:11250903, PubMed:11283244, PubMed:16858408, PubMed:16809778) (By similarity). {ECO:0000250|UniProtKB:P10964, ECO:0000269|PubMed:11250903, ECO:0000269|PubMed:11283244, ECO:0000269|PubMed:16809778, ECO:0000269|PubMed:16858408, ECO:0000269|PubMed:34671025, ECO:0000269|PubMed:34887565, ECO:0000269|PubMed:36271492}.
Molecular Weight:	128.2 kDa
UniProt:	Q9H9Y6

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

Application Details

	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