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Datasheet for ABIN3095951

## TOP3A Protein (AA 1-1001) (Strep Tag)

### 1 Image

#### Overview

Quantity:	1 mg
Target:	TOP3A
Protein Characteristics:	AA 1-1001
Origin:	Human
Source:	Tobacco ( <i>Nicotiana tabacum</i> )
Protein Type:	Recombinant
Purification tag / Conjugate:	This TOP3A protein is labelled with Strep Tag.
Application:	ELISA, SDS-PAGE (SDS), Western Blotting (WB)

#### Product Details

Sequence: MIFPVARYAL RWLRRPEDRA FSRAAMEMAL RGVKRVLCVA EKNDAAKGIA DLLSNGRMRR  
REGLSKFNKI YEFDYHLYGQ NVTMVMTSVS GHLLAHDFQM QFRKWQSCNP LVLFEAEIEK  
YCPENFVDIK KTLERETRQC QALVIWTD CD REGENIGFEI IHVCKAVKPN LQVLRARFSE  
ITPHAVRTAC ENLTEPDQRV SDAVDVRQEL DLRIGAAFTR FQTLRLQRIF PEVLAEQLIS  
YGSCQFPTLG FVVERFKAIQ AFVPEIFHRI KVTHDHDKGI VEFNWKRHRL FNHTACLVLV  
QLCVEDPMAT VVEVRSKPKS KWRPQALDTV ELEKLASRKL RINAKETMRI AEKLYTQGYI  
SYPRTETNIF PRDLNLTVLV EQQTPDPRWG AFAQSILERG GPTPRNGNKS DQAHPIIHPT  
KYTNNLQGDE QRLYEFIVRH FLACCSQDAQ GQETTVEIDI AQERFVAHGL MILARNYLDV  
YPYDHWSDKI LPVYEQGS HF QPSTVEMVDG ETSPPKLLTE ADLIALMEKH GIGTDATHAE  
HIETIKARMY VGLTPDKRFL PGHLGMGLVE GYDSMGYEMS KPDLR AELEA DLKLCIDGKK  
DKFVVL RQQV QKYKQVFIEA VAKAKKLDEA LAQYFGNGTE LAQQEDIYPA MPEPIRKCPQ  
CNKDMVLKTK KNGGFYLSCM GFPECRSAVW LPDSVLEASR DSSVCPVCQP HPVYRLKLFK

KRGLPPTMP LEFVCCIGGC DDTLREILD LRFSGGPPRAS QPSGRLQANQ SLNRMDNSQH  
PQPADSRQTG SSKALAQTLP PPTAAGESNS VTCNCGQEA VLLTVRKEGPN RGRQFFKCNG  
GSCNFFLWAD SPNPGAGGPP ALAYRPLGAS LGCPPGPGIH LGGFGNPGDG SGGTSCCLCS  
QPSVTRTVQK DGNPKGRQFH TCAKPREQQC GFFQWVDENT APGTSGAPSW TGDRGRTLES  
EARSKRPRAS SSDMGSTAKK PRKCSLCHQP GHTRPFCPQN R

**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.**

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### 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:

- 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

## Product Details

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specific reference buffer.

- We use the ExPASy's ProtParam tool to determine the absorption coefficient of each protein.

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Purification:	Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALICE®): <ol style="list-style-type: none"><li>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.</li><li>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.</li></ol>
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

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Target:	TOP3A
Alternative Name:	TOP3A ( <a href="#">TOP3A Products</a> )
Background:	<p>DNA topoisomerase 3-alpha (EC 5.6.2.1) (DNA topoisomerase III alpha),FUNCTION: Releases the supercoiling and torsional tension of DNA introduced during the DNA replication and transcription by transiently cleaving and rejoining one strand of the DNA duplex. Introduces a single-strand break via transesterification at a target site in duplex DNA. The scissile phosphodiester is attacked by the catalytic tyrosine of the enzyme, resulting in the formation of a DNA-(5'-phosphotyrosyl)-enzyme intermediate and the expulsion of a 3'-OH DNA strand. The free DNA strand then undergoes passage around the unbroken strand thus removing DNA supercoils. Finally, in the religation step, the DNA 3'-OH attacks the covalent intermediate to expel the active-site tyrosine and restore the DNA phosphodiester backbone. As an essential component of the RMI complex it is involved in chromosome separation and the processing of homologous recombination intermediates to limit DNA crossover formation in cells. Has DNA decatenation activity (PubMed:30057030). It is required for mtDNA decatenation and segregation after completion of replication, in a process that does not require BLM, RMI1 and RMI2 (PubMed:29290614). {ECO:0000269 PubMed:20445207, ECO:0000269 PubMed:29290614, ECO:0000269 PubMed:30057030, ECO:0000269 PubMed:8622991}.</p>

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## Target Details

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Molecular Weight:	112.4 kDa
UniProt:	<a href="#">Q13472</a>
Pathways:	<a href="#">DNA Damage Repair</a>

## Application Details

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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:	<p>ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from <i>Nicotiana tabacum</i> 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.</p> <p>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!</p>
Restrictions:	For Research Use only

## Handling

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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)



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