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Datasheet for ABIN3095891  
**TDG Protein (AA 1-410) (Strep Tag)**

### Overview

Quantity:	1 mg
Target:	TDG
Protein Characteristics:	AA 1-410
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This TDG protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

### Product Details

Sequence: MEAENAGSYS LQQAQAFYTF PFQQLMAEAP NMAVVNEQQM PEEVPAPAPA QEPVQEAPKG  
RKRKPRTEP KQPVEPKPV ESKKSGKSAK SKEKQEKITD TFKVKRKVDR FNGVSEAELL  
TKTLPDILTF NLDIVIIGIN PGLMAAYKGH HYPGPGNHFW KCLFMSGLSE VQLNHMDDHT  
LPGKYGIGFT NMVERTTPGS KDLSSKEFRE GGRILVQKLQ KYQPRIAVFN GKCIYEIFSK  
EVFGVKVKNL EFG LQPHKIP DTETLCYVMP SSSARCAQFP RAQDKVHYI KLKDLRDQLK  
GIERNMDVQE VQYTFDLQLA QEDAKKMAVK EEKYDPGYEA AYGGAYGENP CSSEPCGFSS  
NGLIESVELR GESAFSGIPN GQWMTQSFTD QIPSFNSHCG TQEQUEESHA

**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:

- 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 Exspasy'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®):

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.

## Product Details

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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:	TDG
Alternative Name:	TDG ( <a href="#">TDG Products</a> )
Background:	<p>G/T mismatch-specific thymine DNA glycosylase (EC 3.2.2.29) (Thymine-DNA glycosylase) (hTDG),FUNCTION: DNA glycosylase that plays a key role in active DNA demethylation: specifically recognizes and binds 5-formylcytosine (5fC) and 5-carboxylcytosine (5caC) in the context of CpG sites and mediates their excision through base-excision repair (BER) to install an unmethylated cytosine. Cannot remove 5-hydroxymethylcytosine (5hmC). According to an alternative model, involved in DNA demethylation by mediating DNA glycolase activity toward 5-hydroxymethyluracil (5hmU) produced by deamination of 5hmC. Also involved in DNA repair by acting as a thymine-DNA glycosylase that mediates correction of G/T mismatches to G/C pairs: in the DNA of higher eukaryotes, hydrolytic deamination of 5-methylcytosine to thymine leads to the formation of G/T mismatches. Its role in the repair of canonical base damage is however minor compared to its role in DNA demethylation. It is capable of hydrolyzing the carbon-nitrogen bond between the sugar-phosphate backbone of the DNA and a mispaired thymine. In addition to the G/T, it can remove thymine also from C/T and T/T mismatches in the order G/T &gt;&gt; C/T &gt; T/T. It has no detectable activity on apyrimidinic sites and does not catalyze the removal of thymine from A/T pairs or from single-stranded DNA. It can also remove uracil and 5-bromouracil from mismatches with guanine. {ECO:0000269 PubMed:21862836, ECO:0000269 PubMed:22327402, ECO:0000269 PubMed:22573813, ECO:0000269 PubMed:22962365, ECO:0000269 PubMed:8127859, ECO:0000269 PubMed:8407958, ECO:0000269 PubMed:8662714}.</p>
Molecular Weight:	46.1 kDa
UniProt:	<a href="#">Q13569</a>
Pathways:	<a href="#">DNA Damage Repair</a> , <a href="#">Chromatin Binding</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
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## Application Details

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as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

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Comment:

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Restrictions:

For Research Use only

## Handling

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Format:

Liquid

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Buffer:

The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.

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Handling Advice:

Avoid repeated freeze-thaw cycles.

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Storage:

-80 °C

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Storage Comment:

Store at -80°C.

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Expiry Date:

Unlimited (if stored properly)