Datasheet for ABIN3135884

# DNA2 Protein (AA 1-1062) (Strep Tag)

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## Overview

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| Quantity: | 250 µg |
| Target: | DNA2 |
| Protein Characteristics: | AA 1-1062 |
| Origin: | Mouse |
| Source: | Cell-free protein synthesis (CFPS) |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This DNA2 protein is labelled with Strep Tag. |
| Application: | ELISA, Western Blotting (WB), SDS-PAGE (SDS) |

## Product Details

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| Brand: | AliCE® |
| Sequence: | MEPLDELDLL LLEEDGGAEA VPRVELLRKK ADALFPETVL SRGVDNRYLV LAVETSQNER GAEEKRLHVT ASQDREHEVL CILRNGWSSV PVEPGDIVHL EGDCTSEPWI IDDDFGYFIL YPDMMISGTS VASSIRCLRR AVLSETFRGS DPATRQMLIG TILHEVFQKA ISESFAPERL QELALQTLRE VRHLKEMYRL NLSQDEILCE VEEYLPSFSK WAEDFMRKGP SSEFPQMQLS LPSDGSNRSS PCNIEVVKSL DIEESIWSPR FGLKGKIDVT VGVKIHRDCK MKYKVMPLEL KTGKESNSIE HRSQVVLYTL LSQERREDPE AGWLLYLKTG QMYPVPANHL DKRELLKLRN WLAASLLHRV SRAAPGEEAR LSALPQIIEE EKTCKYCSQI GNCALYSRAV EEQGDDASIP EAMLSKIQEE TRHLQLAHLK YFSLWCLMLT LESQSKDNRK THQSIWLTPA SELEESGNCV GNLVRTEPVS RVCDGQYLHN FQRKNGPMPA TNLMAGDRII LSGEERKLFA LSKGYVKKMN KAAVTCLLDR NLSTLPATTV FRLDREERHG DISTPLGNLS KLMESTDPSK RLRELIIDFR EPQFIAYLSS VLPHDAKDTV ANILKGLNKP QRQAMKRVLL SKDYTLIVGM PGTGKTTTIC |

ALVRILSACG FSVLLTSYTH SAVDNILLKL AKFKVGFLRL GQSHKVHPDI QKFTEEEICR SRSIASLAHL EELYNSHPIV ATTCMGINHP IFSRKTFDFC IVDEASQISQ PVCLGPLFFS RRFVLVGDHQ QLPPLVVNRE ARALGMSESL FKRLERNESA VVQLTVQYRM NRKIMSLSNK LTYAGKLECG SDRVANAVLA LPNLKDARLS LQLYADYSDS PWLAGVLEPD NPVCFLNTDK VPAPEQVENG GVSNVTEARL IVFLTSTFIK AGCSPSDIGV IAPYRQQLRI ISDLLARSSV GMVEVNTVDK YQGRDKSLIL VSFVRSNEDG TLGELLKDWR RLNVALTRAK HKLILLGSVS SLKRFPPLGT LFDHLNAEQL ILDLPSREHE SLSHILGDCQ RD

**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 in one-step affinity chromatography
- 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 try to ensure that you receive soluble 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.

## Product Details

- The protein's absorbance will be measured against its specific reference buffer.
- We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.

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| Purification: | One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (AliCE®). |
| Purity: | > 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC). |
| Grade: | custom-made |

## Target Details

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| Target: | DNA2 |
| Alternative Name: | Dna2 (DNA2 Products) |
| Background: | DNA replication ATP-dependent helicase/nuclease DNA2 (DNA replication ATP-dependent helicase-like homolog) [Includes: DNA replication nuclease DNA2 (EC 3.1.-.-), DNA replication ATP-dependent helicase DNA2 (EC 3.6.4.12)],FUNCTION: Key enzyme involved in DNA replication and DNA repair in nucleus and mitochondrion. Involved in Okazaki fragments processing by cleaving long flaps that escape FEN1: flaps that are longer than 27 nucleotides are coated by replication protein A complex (RPA), leading to recruit DNA2 which cleaves the flap until it is too short to bind RPA and becomes a substrate for FEN1. Also involved in 5'-end resection of DNA during double-strand break (DSB) repair: recruited by BLM and mediates the cleavage of 5'-ssDNA, while the 3'-ssDNA cleavage is prevented by the presence of RPA. Also involved in DNA replication checkpoint independently of Okazaki fragments processing. Possesses different enzymatic activities, such as single-stranded DNA (ssDNA)-dependent ATPase, 5'-3' helicase and endonuclease activities. While the ATPase and endonuclease activities are well-defined and play a key role in Okazaki fragments processing and DSB repair, the 5'-3' DNA helicase activity is subject to debate. According to various reports, the helicase activity is weak and its function remains largely unclear. Helicase activity may promote the motion of DNA2 on the flap, helping the nuclease function (By similarity). {ECO:0000250}. |
| Molecular Weight: | 119.4 kDa |
| UniProt: | Q6ZQJ5 |
| Pathways: | Telomere Maintenance, DNA Damage Repair, DNA Replication, Synthesis of DNA |

## 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: | 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.<br>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

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| Format: | Liquid |
| Buffer: | The buffer composition is at the discretion of the manufacturer.<br>Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol **Might differ depending on protein.** |
| Handling Advice: | Avoid repeated freeze-thaw cycles. |
| Storage: | -80 °C |
| Storage Comment: | Store at -80°C. |
| Expiry Date: | 12 months |