Datasheet for ABIN7553714

# DNA2 Protein (AA 1-1060) (His tag)

Go to Product page

## Overview

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| Quantity: | 1 mg |
| Target: | DNA2 |
| Protein Characteristics: | AA 1-1060 |
| Origin: | Human |
| Source: | HEK-293 Cells |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This DNA2 protein is labelled with His tag. |

## Product Details

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| Purpose: | Custom-made recombinant DNA2 Protein expressed in mammalian cells. |
| Sequence: | MEQLNELELL MEKSFWEEAE LPAELFQKKV VASFPRTVLS TGMDNRYLVL AVNTVQNKEG NCEKRLVITA SQSLENKELC ILRNDWCSVP VEPGDIIHLE GDCTSDTWII DKDFGYLILY PDMLISGTSI ASSIRCMRRA VLSETFRSSD PATRQMLIGT VLHEVFQKAI NNSFAPEKLQ ELAFQTIQEI RHLKEMYRLN LSQDEIKQEV EDYLPSFCKW AGDFMHKNTS TDFPQMQLSL PSDNSKDNST CNIEVVKPMD IEESIWSPRF GLKGKIDVTV GVKIHRGYKT KYKIMPLELK TGKESNSIEH RSQVVLYTLL SQERRADPEA GLLLYLKTGQ MYPVPANHLD KRELLKLRNQ MAFSLFHRIS KSATRQKTQL ASLPQIIEEE KTCKYCSQIG NCALYSRAVE QQMDCSSVPI VMLPKIEEET QHLKQTHLEY FSLWCLMLTL ESQSKDNKKN HQNIWLMPAS EMEKSGSCIG NLIRMEHVKI VCDGQYLHNF QCKHGAIPVT NLMAGDRVIV SGEERSLFAL SRGYVKEINM TTVTCLLDRN LSVLPESTLF RLDQEEKNCD IDTPLGNLSK LMENTFVSKK LRDLIIDFRE PQFISYLSSV LPHDAKDTVA CILKGLNKPQ RQAMKKVLLS KDYTLIVGMP GTGKTTTICT LVRILYACGF SVLLTSYTHS AVDNILLKLA KFKIGFLRLG QIQKVHPAIQ QFTEQEICRS KSIKSLALLE |

## Product Details

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| | ELYNSQLIVA TTCMGINHPI FSRKIFDFCI VDEASQISQP ICLGPLFFSR RFVLVGDHQQ LPPLVLNREA RALGMSESLF KRLEQNKSAV VQLTVQYRMN SKIMSLSNKL TYEGKLECGS DKVANAVINL RHFKDVKLEL EFYADYSDNP WLMGVFEPNN PVCFLNTDKV PAPEQVEKGG VSNVTEAKLI VFLTSIFVKA GCSPSDIGII APYRQQLKII NDLLARSIGM VEVNTVDKYQ GRDKSIVLVS FVRSNKDGTV GELLKDWRRL NVAITRAKHK LILLGCVPSL NCYPPLEKLL NHLNSEKLII DLPSREHESL CHILGDFQRE **Sequence without tag. The proposed Purification-Tag is based on experiences 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.** |
| Specificity: | If you are looking for a specific domain and are interested in a partial protein or a different isoform, please contact us regarding an individual offer. |
| Characteristics: | Key Benefits:<br>• Made to order protein - from design to production - by highly experienced protein experts.<br>• Protein expressed in mammalian cells and purified in one-step affinity chromatography<br>• The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins.<br>• State-of-the-art algorithm used for plasmid design (Gene synthesis).<br><br>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.<br><br>If you are not interested in a full length protein, please contact us for individual protein fragments.<br><br>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. |
| Purity: | > 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, 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 (hDNA2) (DNA replication ATP-dependent helicase-like homolog) [Includes: DNA replication nuclease DNA2 (EC 3.1.-.-), DNA |

## Target Details

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| | 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. {ECO:0000269\|PubMed:16595799, ECO:0000269\|PubMed:16595800, ECO:0000269\|PubMed:18995831, ECO:0000269\|PubMed:19487465, ECO:0000269\|PubMed:21325134, ECO:0000269\|PubMed:21572043, ECO:0000269\|PubMed:22570407, ECO:0000269\|PubMed:22570476}. |
| Molecular Weight: | 120.4 kDa |
| UniProt: | P51530 |
| Pathways: | Telomere Maintenance, DNA Damage Repair, DNA Replication, Synthesis of DNA |

## Application Details

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| Application Notes: | We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though. |
| Restrictions: | For Research Use only |

## Handling

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| Format: | Liquid |
| Buffer: | The buffer composition is at the discretion of the manufacturer. |
| Handling Advice: | Avoid repeated freeze-thaw cycles. |
| Storage: | -80 °C |

## Handling

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| Storage Comment: | Store at -80°C. |
| Expiry Date: | 12 months |