Datasheet for ABIN3091277

C6orf150 Protein (AA 1-522) (Strep Tag)

1 Image

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Overview

Quantity:	1 mg
Target:	C6orf150
Protein Characteristics:	AA 1-522
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This C6orf150 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence: MQPWHGKAMQ RASEAGATAP KASARNARGA PMDPTESPAA PEAALPKAGK FGPARKSGSR QKKSAPDTQE RPPVRATGAR AKKAPQRAQD TQPSDATSAP GAEGLEPPAA REPALSRAGS CRQRGARCST KPRPPPGPWD VPSPGLPVSA PILVRRDAAP GASKLRAVLE KLKLSRDDIS TAAGMVKGVV DHLLLRLKCD SAFRGVGLLN TGSYYEHVKI SAPNEFDVMF KLEVPRIQLE EYSNTRAYYF VKFKRNPKEN PLSQFLEGEI LSASKMLSKF RKIIKEEIND IKDTDVIMKR KRGGSPAVTL LISEKISVDI TLALESKSSW PASTQEGLRI QNWLSAKVRK QLRLKPFYLV PKHAKEGNGF QEETWRLSFS HIEKEILNNH GKSKTCCENK EEKCCRKDCL KLMKYLLEQL KERFKDKKHL DKFSSYHVKT AFFHVCTQNP QDSQWDRKDL GLCFDNCVTY FLQCLRTEKL ENYFIPEFNL FSSNLIDKRS KEFLTKQIEY ERNNEFPVFD EF

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.

Product Details

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 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

Product Details

	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:	C6orf150
Alternative Name:	CGAS (C6orf150 Products)
Background:	Cyclic GMP-AMP synthase (cGAMP synthase) (cGAS) (h-cGAS) (EC 2.7.7.86) (2'3'-cGAMP synthase) (Mab-21 domain-containing protein 1),FUNCTION: Nucleotidyltransferase that catalyzes the formation of cyclic GMP-AMP (2',3'-cGAMP) from ATP and GTP and plays a key role in innate immunity (PubMed:23258413, PubMed:24077100, PubMed:25131990, PubMed:23707061, PubMed:23722159, PubMed:29976794, PubMed:30799039, PubMed:21478870, PubMed:23707065, PubMed:24116191, PubMed:24462292, PubMed:32814054, PubMed:33273464, PubMed:26300263, PubMed:33542149, PubMed:31142647, PubMed:37217469, PubMed:37802025). Catalysis involves both the formation of a 2',5' phosphodiester linkage at the GpA step and the formation of a 3',5' phosphodiester linkage at the ApG step, producing c[G(2',5')pA(3',5')p] (PubMed:28214358, PubMed:28363908). Acts as a key DNA sensor: directly binds double-stranded DNA (dsDNA), inducing the formation of liquid-like droplets in which CGAS is activated, leading to synthesis of 2',3'-cGAMP, a second messenger that binds to and activates STING1, thereby triggering type-I interferon production (PubMed:28314590, PubMed:28363908, PubMed:29976794, PubMed:33230297, PubMed:32817552, PubMed:33606975, PubMed:35438208, PubMed:35460603, PubMed:35322803, PubMed:35503863). Preferentially recognizes and binds curved long dsDNAs of a minimal length of 40 bp (PubMed:30007416). Acts as a key foreign DNA sensor, the presence of double-stranded DNA (dsDNA) in the cytoplasm being a danger signal that triggers the immune responses (PubMed:28363908). Has antiviral activity by sensing the presence of dsDNA from DNA viruses in the cytoplasm (PubMed:28363908). Also acts as an innate immune sensor of infection by retroviruses, such as HIV-2, by detecting the presence of reverse-transcribed DNA in the cytosol (PubMed:23929945, PubMed:24269171, PubMed:30270045, PubMed:32852081). In contrast, HIV-1 is poorly sensed by CGAS, due to its capsid that cloaks viral DNA from CGAS detection (PubMed:24269171, PubMed:30270045, PubMed:32852081). Detection of retroviral reverse-transcribed DNA in the cytosol may be

indirect and be mediated via interaction with PQBP1, which directly binds reverse-transcribed retroviral DNA (PubMed:26046437). Also detects the presence of DNA from bacteria, such as M.tuberculosis (PubMed:26048138). 2',3'-cGAMP can be transferred from producing cells to neighboring cells through gap junctions, leading to promote STING1 activation and convey immune response to connecting cells (PubMed:24077100). 2',3'-cGAMP can also be transferred between cells by virtue of packaging within viral particles contributing to IFN-induction in newly infected cells in a cGAS-independent but STING1-dependent manner (PubMed:26229115). Also senses the presence of neutrophil extracellular traps (NETs) that are translocated to the cytosol following phagocytosis, leading to synthesis of 2',3'-cGAMP (PubMed:33688080). In addition to foreign DNA, can also be activated by endogenous nuclear or mitochondrial DNA (PubMed:31299200, PubMed:28738408, PubMed:28759889, PubMed:33230297, PubMed:33031745). When self-DNA leaks into the cytosol during cellular stress (such as mitochondrial stress, SARS-CoV-2 infection causing severe COVID-19 disease, DNA damage, mitotic arrest or senescence), or is present in form of cytosolic micronuclei, CGAS is activated leading to a state of sterile inflammation (PubMed:31299200, PubMed:28738408, PubMed:28759889, PubMed:33230297, PubMed:33031745, PubMed:35045565). Acts as a regulator of cellular senescence by binding to cytosolic chromatin fragments that are present in senescent cells, leading to trigger type-I interferon production via STING1 and promote cellular senescence (By similarity). Also involved in the inflammatory response to genome instability and double-stranded DNA breaks: acts by localizing to micronuclei arising from genome instability (PubMed:28738408, PubMed:28759889). Micronuclei, which are frequently found in cancer cells, consist of chromatin surrounded by their own nuclear membrane: following breakdown of the micronuclear envelope, a process associated with chromothripsis, CGAS binds self-DNA exposed to the cytosol, leading to 2',3'-cGAMP synthesis and subsequent activation of STING1 and type-I interferon production (PubMed:28738408, PubMed:28759889). Activated in response to prolonged mitotic arrest, promoting mitotic cell death (PubMed:31299200). In a healthy cell, CGAS is however kept inactive even in cellular events that directly expose it to self-DNA, such as mitosis, when cGAS associates with chromatin directly after nuclear envelope breakdown or remains in the form of postmitotic persistent nuclear cGAS pools bound to chromatin (PubMed:31299200, PubMed:33542149). Nuclear CGAS is inactivated by chromatin via direct interaction with nucleosomes, which block CGAS from DNA binding and thus prevent CGAS-induced autoimmunity (PubMed:31299200, PubMed:33542149, PubMed:33051594, PubMed:32911482, PubMed:32912999). Also acts as a suppressor of DNA repair in response to DNA damage: inhibits homologous recombination repair by interacting with PARP1, the CGAS-PARP1 interaction leading to impede the formation of the PARP1-TIMELESS complex (PubMed:30356214, PubMed:31544964). In addition to DNA, also sense

	translation stress: in response to translation stress, translocates to the cytosol and associates with collided ribosomes, promoting its activation and triggering type-I interferon production (PubMed:34111399). In contrast to other mammals, human CGAS displays species-specific mechanisms of DNA recognition and produces less 2',3'-cGAMP, allowing a more fine-tuned response to pathogens (PubMed:30007416). {ECO:0000250|UniProtKB:Q8C6L5, ECO:0000269|PubMed:21478870, ECO:0000269|PubMed:23258413, ECO:0000269|PubMed:23707061, ECO:0000269|PubMed:23707065, ECO:0000269|PubMed:23722159, ECO:0000269|PubMed:23929945, ECO:0000269|PubMed:24077100, ECO:0000269|PubMed:24116191, ECO:0000269|PubMed:24269171, ECO:0000269|PubMed:24462292, ECO:0000269|PubMed:25131990, ECO:0000269|PubMed:26046437, ECO:0000269|PubMed:26048138, ECO:0000269|PubMed:26229115, ECO:0000269|PubMed:26300263, ECO:0000269|PubMed:28214358, ECO:0000269|PubMed:28314590, ECO:0000269|PubMed:28363908, ECO:0000269|PubMed:28738408, ECO:0000269|PubMed:28759889, ECO:0000269|PubMed:29976794, ECO:0000269|PubMed:30007416, ECO:0000269|PubMed:30270045, ECO:0000269|PubMed:30356214, ECO:0000269|PubMed:30799039, ECO:0000269|PubMed:31142647, ECO:0000269|PubMed:31299200, ECO:0000269|PubMed:31544964, ECO:0000269|PubMed:32814054, ECO:0000269|PubMed:32817552, ECO:0000269|PubMed:32852081, ECO:0000269|PubMed:32911482, ECO:0000269|PubMed:32912999, ECO:0000269|PubMed:33031745, ECO:0000269|PubMed:33051594, ECO:0000269|PubMed:33230297, ECO:0000269|PubMed:33273464, ECO:0000269|PubMed:33542149, ECO:0000269|PubMed:33606975, ECO:0000269|PubMed:33688080, ECO:0000269|PubMed:34111399, ECO:0000269|PubMed:35045565, ECO:0000269|PubMed:35322803, ECO:0000269|PubMed:35438208, ECO:0000269|PubMed:35460603, ECO:0000269|PubMed:35503863, ECO:0000269|PubMed:37217469, ECO:0000269|PubMed:37802025}.
Molecular Weight:	58.8 kDa
UniProt:	Q8N884
Pathways:	Activation of Innate immune Response

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 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)

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