Datasheet for ABIN7564520

C6orf150 Protein (AA 1-507) (His tag)

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Overview

Quantity:	1 mg
Target:	C6orf150
Protein Characteristics:	AA 1-507
Origin:	Mouse
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This C6orf150 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant Cgas Protein expressed in mammalian cells.
Sequence:	MEDPRRRTTA PRAKKPSAKR APTQPSRTRA HAESCGPQRG ARSRRAERDG DTTEKPRAPG PRVHPARATE LTKDAQPSAM DAAGATARPA VRVPQQQAIL DPELPAVREP QPPADPEARK VVRGPSHRRG ARSTGQPRAP RGSRKEPDKL KKVLDKLRLK RKDISEAAET VNKVVERLLR RMQKRESEFK GVEQLNTGSY YEHVKISAPN EFDVMFKLEV PRIELQEYYE TGAFYLVKFK RIPRGNPLSH FLEGEVLSAT KMLSKFRKII KEEVKEIKDI DVSVEKEKPG SPAVTLLIRN PEEISVDIIL ALESKGSWPI STKEGLPIQG WLGTKVRTNL RREPFYLVPK NAKDGNSFQG ETWRLSFSHT EKYILNNHGI EKTCCESSGA KCCRKECLKL MKYLLEQLKK EFQELDAFCS YHVKTAIFHM WTQDPQDSQW DPRNLSSCFD KLLAFFLECL RTEKLDHYFI PKFNLFSQEL IDRKSKEFLS KKIEYERNNG FPIFDKL **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

Product Details

	isoform, please contact us regarding an individual offer.
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts. • Protein expressed in mammalian cells and purified in one-step affinity chromatography • The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins. • 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. If you are not interested in a full length protein, please contact us for individual protein fragments. 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

Target:	C6orf150
Alternative Name:	Cgas (C6orf150 Products)
Background:	Cyclic GMP-AMP synthase (cGAMP synthase) (cGAS) (m-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:23647843, PubMed:23722158, PubMed:26829768, PubMed:28214358, PubMed:29625897, PubMed:29426904, PubMed:32814054). 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:23258413, PubMed:23647843, PubMed:23722158, PubMed:26829768, PubMed:28214358). 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:23722158, PubMed:28314590,

PubMed:28363908, PubMed:28095500). Preferentially binds long dsDNA (around 45 bp) and forms ladder-like networks that function cooperatively to stabilize individual cGAS-dsDNA complexes (PubMed:28902841). 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:23722158, PubMed:28314590, PubMed:28363908). Has antiviral activity by sensing the presence of dsDNA from DNA viruses in the cytoplasm (PubMed:23258413, PubMed:23722158, PubMed:23647843). Also acts as an innate immune sensor of infection by retroviruses by detecting the presence of reverse-transcribed DNA in the cytosol (PubMed:23929945). 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 (By similarity). Also detects the presence of DNA from bacteria (By similarity). 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:26229117). 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 (By similarity). When self-DNA leaks into the cytosol during cellular stress (such as mitochondrial stress, 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:28738408, PubMed:28759028). 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 (PubMed:28759028). 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). Micronuclei, which as frequently found in cancer cells, consist of chromatin surrounded by its 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). 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 (By similarity). Nuclear CGAS is inactivated by chromatin via direct interaction with nucleosomes, which block CGAS from DNA binding and thus prevent CGAS-induced autoimmunity (PubMed:31808743, PubMed:32911481,

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	PubMed:32911480, PubMed:32913000). 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, PubMed:35210392). 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 (By similarity). {ECO:0000250|UniProtKB:Q8N884, ECO:0000269|PubMed:23258413, ECO:0000269|PubMed:23647843, ECO:0000269|PubMed:23722158, ECO:0000269|PubMed:23929945, ECO:0000269|PubMed:24077100, ECO:0000269|PubMed:26229117, ECO:0000269|PubMed:26829768, ECO:0000269|PubMed:28095500, ECO:0000269|PubMed:28214358, ECO:0000269|PubMed:28314590, ECO:0000269|PubMed:28363908, ECO:0000269|PubMed:28738408, ECO:0000269|PubMed:28759028, ECO:0000269|PubMed:28902841, ECO:0000269|PubMed:29426904, ECO:0000269|PubMed:29625897, ECO:0000269|PubMed:30356214, ECO:0000269|PubMed:31544964, ECO:0000269|PubMed:31808743, ECO:0000269|PubMed:32814054, ECO:0000269|PubMed:32911480, ECO:0000269|PubMed:32911481, ECO:0000269|PubMed:32913000, ECO:0000269|PubMed:33688080, ECO:0000269|PubMed:35210392}.
Molecular Weight:	58.2 kDa
UniProt:	Q8C6L5
Pathways:	Activation of Innate immune Response

Application Details

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

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

Handling

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