

Product Data Sheet

cGAS Protein, Human (His-SUMO)

Cat. No.:	HY-P71597
Synonyms:	C6orf150; cGAMP synthase; cGAS; CGAS_HUMAN; cGMP Synthase; Chromosome 6 open reading frame 150; Cyclic GMP-AMP synthase; h-cGAS; Hypothetical protein LOC115004; Mab 21 domain containing 1; Mab-21 domain-containing protein 1; MB21D1; MGC131892; MGC142166; MGC142168; OTTHUMP00000016743; OTTHUMP00000039330; protein MB21D1; Uncharacterized protein C6orf150
Species:	Human
Source:	E. coli
Accession:	Q8N884 (G161-F522)
Gene ID:	115004
Molecular Weight:	Approximately 58.3 kDa

PROPERTIES

AA Sequence	GASKLRAVLE KLKLS	RDDIS	ΤΑΑGΜVΚGVV	DHLLLRLKCD			
	SAFRGVGLLN TGSYY	ЕНVКІ	SAPNEFDVMF	KLEVPRIQLE			
	EYSNTRAYYF VKFKR	ΝΡΚΕΝ	PLSQFLEGEI	LSASKMLSKF			
	RKIIKEEIND IKDTD	VIMKR	KRGGSPAVTL	LISEKISVDI			
	TLALESKSSW PASTQ	EGLRI	QNWLSAKVRK	QLRLKPFYLV			
	PKHAKEGNGF QEETW	RLSFS	HIEKEILNNH	GKSKTCCENK			
	EEKCCRKDCL KLMKY	LLEQL	KERFKDKKHL	DKFSSYHVKT			
	A F F H V C T Q N P Q D S Q W	DRKDL	GLCFDNCVTY	FLQCLRTEKL			
	ENYFIPEFNL FSSNL	IDKRS	KEFLTKQIEY	ERNNEFPVFD			
	E F						
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.						
Appearance	Lyophilized powder.						
Formulation	I vonhilized from a 0.2 um sterile filtered 20 mM Tris-HC1, 0.5 M NaCL 6% Trehalose, pH 8.0						
ronnatation							
Endotoxin Level	<1 EU/µg, determined by LAL method.						
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 $\mu\text{g}/\text{mL}$ in ddH_2O.						
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.						
Shipping	Room temperature in continental US; m	ay vary elsewh	ere.				

Background

cGAS Protein, a nucleotidyltransferase, plays a pivotal role in innate immunity by catalyzing the formation of cyclic GMP-AMP (2',3'-cGAMP) from ATP and GTP. Acting as a key DNA sensor, cGAS directly binds double-stranded DNA (dsDNA), inducing the synthesis of 2',3'-cGAMP, a second messenger that activates STING1, leading to the production of type-I interferon and triggering immune responses. Recognizing curved long dsDNAs, cGAS acts as a foreign DNA sensor, detecting the presence of DNA from viruses, retroviruses, bacteria, and neutrophil extracellular traps (NETs). Moreover, cGAS responds to endogenous DNA released during cellular stress, contributing to sterile inflammation. It regulates cellular senescence by binding to cytosolic chromatin fragments and participates in the inflammatory response to genome instability and doublestranded DNA breaks. cGAS is also implicated in sensing translation stress, and its activation inhibits homologous recombination repair in response to DNA damage. Human cGAS exhibits species-specific mechanisms of DNA recognition, allowing a more finely tuned response to pathogens.

Caution: Product has not been fully validated for medical applications. For research use only.

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