cGAS Protein, Human (His)

Cat. No.:	HY-P72337
Synonyms:	Cyclic GMP-AMP synthase; cGAMP synthase; h-cGAS; 2'3'-cGAMP synthase; Mab-21 domain-containing protein 1; MB21D1; C6orf150
Species:	Human
Source:	E. coli
Accession:	Q8N884-1 (M1-F522)
Gene ID:	115004
Molecular Weight:	Approximately 58.9 kDa

PROPERTIES

AA Sequence	M Q P W H G K A M Q R A S E A G A T A P K A S A R N A R G A P M D P T E S P A A P E A A L P K A G K F G P A R K S G S R Q K K S A P D T Q E R P P V R A T G A R A K K A P Q R A Q D T Q P S D A T S A P G A E G L E P P A A R E P A L S R A G S C R Q R G A R C S T K P R P P P G P W D V P S P G L P V S A P I L V R R D A A P G A S K L R A V L E K L K L S R D D I S T A A G M V K G V V D H L L L R L K C D S A F R G V G L L N T G S Y Y E H V K I S A P N E F D V M F K L E V P R I Q L E E Y S N T R A Y Y F V K F K R N P K E N P L S Q F L E G E I L S A S K M L S K F R K I I K E E I N D I K D T D V I M K R K R G G S P A V T L L I S E K I S V D I T L A L E S K S S W P A S T Q E G L R I Q N W L S A K V R K Q L R L K P F Y L V P K H A K E G N G F Q E E T W R L S F S H I E K E I L N N H G K S K T C C E N K E E K C C R K D C L K L M K Y L L E Q L K E R F K D K K H L D K F S S Y H V K T A F F H V C T Q N P Q D S Q W D R K D L G L C F D N C V T Y F L Q C L R T E K L E N Y F I P E F N L F S S N L I D K R S K E F L T K Q I E Y E R N N E F P V F D E F
Biological Activity	Enzyme activity has been tested in vitro.
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 20 mM Tris HCl, 100 mM NaCl, 1 mM DTT, 5% Glycerol, pH 7.5 or PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

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 double-stranded 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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