

## cGAS Protein, Human (His-SUMO)

<b>Cat. No.:</b>	HY-P71597
<b>Synonyms:</b>	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
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	Q8N884-1 (G161-F522)
<b>Gene ID:</b>	115004
<b>Molecular Weight:</b>	Approximately 58.3-64 kDa

### PROPERTIES

<b>AA Sequence</b>	<pre> 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 </pre>
<b>Biological Activity</b>	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
<b>Appearance</b>	Lyophilized powder
<b>Formulation</b>	Lyophilized from a 0.2 µm sterile filtered 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0 or PBS, 6% Trehalose, pH 7.4.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

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## 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.

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

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