Recombinant Human CGAS Protein, His-tagged

Cat. No. CGAS-019H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant full length human CGAS protein (2-522) with a N-terminal His tag was expressed in E. coli.
Species	Human
Source	E.coli
ProteinLength	2-522
Description	Cyclic GMP-AMP (cGAMP) synthase (cGAS) is a nucleotidyltransferase located in the cytosol that acts as a cytosolic DNA sensor to detect foreign DNA from microbial pathogens as part of the innate immune response. Upon binding to cytosolic DNA, cGAS produces the cyclic dinucleotide second messenger cGAMP, which activates stimulator of interferon genes (STING), leading to activation of the type I interferon (IFN) pathway. In vitro, fibroblasts, macrophages, and dendritic cells isolated from cGAS knockout (cGAS -/-) mice do not produce type I IFNs following DNA transfection or DNA virus infection. Similarly, cells containing a frame-shift mutation in the cGAS locus fail to mount an immune response to HIV and other retroviruses. In vivo, cGAS -/- mice infected with herpes simplex virus 1 (HSV-1) have lower levels of IFN-α and IFN-β, shorter survival times, and higher post-mortem levels of HSV-1 in the brain.
Form	50 mM HEPES, pH 8.0, with 300 mM sodium chloride, and 10% glycerol
Molecular Mass	61 kDa

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Purity	≥90% estimated by SDS-PAGE
Unit Definition	One unit of cGAS produces 1 pmole of cGAMP per minute at 37 centigrade in 80 mM Tris-HCL, pH 7.5, containing 200 mM NaCl, 20 μM ZnCL2 , and 20 mM MgCl2 with 4 μg circular DNA (3623 bp) and 0.25 mM each of GTP and ATP.
Stability	≥ 1 year
Storage	Store at -80 centigrade
Shipping	Dry ice in continental US; may vary elsewhere

GENE INFORMATION

Gene Name	CGAS cyclic GMP-AMP synthase [Homo sapiens (human)]
Official Symbol	CGAS
Synonyms	CGAS; cyclic GMP-AMP synthase; MB21D1; h-cGAS; C6orf150; cyclic GMP-AMP synthase;2'3'-cGAMP synthase; Mab-21 domain containing 1; cGAMP synthase; mab-21 domain-containing protein 1; protein MB21D1; EC 2.7.7.86
Gene ID	115004
mRNA Refseq	NM_138441
Protein Refseq	NP_612450
MIM	613973
UniProt ID	Q8N884

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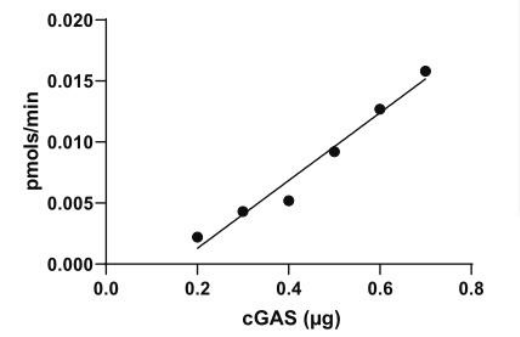
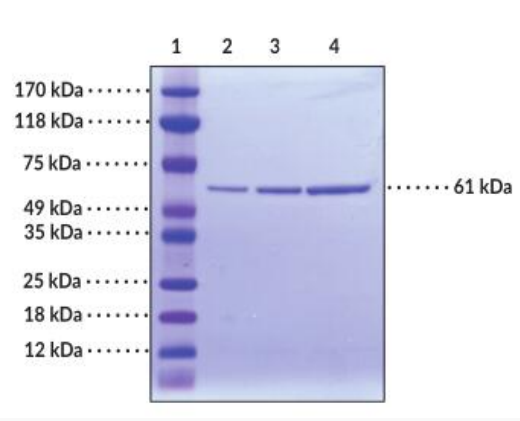
cGAS Activity	 GAS production of cGMP was detected using 2'3'-cGAMP ELISA Kit.
SDS-PAGE analysis of CGAS.	 Lane 1: MW Markers Lane 2: cGAS (1 g) Lane 3: cGAS (2 g) Lane 4: cGAS (4 g)

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