Recombinant CATG protein (His tag)

Catalog Number	542056
Synonyms	CG
Species	Human
Expression System	E. coli
Accession	P08311
Molecular Weight	Predictes a molecular mass of 27.04 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 27 kDa band.

Product Information

Amino Acid Sequence	MSKIKHHHHH HGGSIIGGRE SRPHSRPYMA YLQIQSPAGQ SRCGGFLVRE DFVLTAAHCW GSNINVTLGA HNIQRRENTQ QHITARRAIR HPQYNQRTIQ NDIMLLQLSR RVRRNRNVNP VALPRAQEGL RPGTLCTVAG WGRVSMRRGT DTLREVQLRV QRDRQCLRIF GSYDPRRQIC VGDRRERKAA FKGDSGGPLL CNNVAHGIVS YGKSSGVPPE VFTRVSSFLP WIRTTMRS
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 21-244 aa (P08311) were fused with N-terminal 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

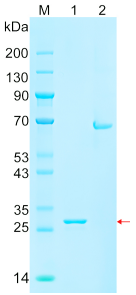
Description

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Recombinant Human Cathepsin G (CG) Fragment (residues 21-244) is a high-purity, functional protein designed for research on serine protease activity and immune regulation. This 224-amino acid fragment includes the complete Peptidase S1 domain, making it an ideal tool for studying proteolytic functions, antibacterial mechanisms, and cell signaling pathways in a controlled experimental setting.
Cathepsin G (EC 3.4.21.20) is a serine protease derived from Homo sapiens, encoded by the CTSG gene (UniProt ID: P08311). It exhibits trypsin- and chymotrypsin-like specificity, with a preference for Phe, Tyr, Trp, and Leu residues at the P1 position. Beyond its proteolytic roles, it possesses intrinsic antibacterial activity against both Gram-negative (e.g., Neisseria gonorrhoeae, Pseudomonas aeruginosa) and Gram-positive (e.g., Listeria monocytogenes, Staphylococcus aureus) bacteria, independent of enzymatic function. Cathepsin G is involved in platelet activation via the F2RL3/PAR4 receptor, modulates immune responses by binding to and stimulating B cells, T cells, and natural killer cells, and processes cytokines like IL36G and IL33 to enhance inflammatory signaling. It also cleaves substrates such as complement C3, vimentin, coagulation factors F8 and F10, and mucin PRG4/lubricin, impacting coagulation, tissue integrity, and infection control. Subcellularly, it localizes to the cell membrane (as a peripheral protein), cytoplasmic granules, lysosomes, cytosol, and nucleus, and is secreted by activated neutrophils into environments like synovial fluid, highlighting its dynamic roles in immunity, apoptosis, and pathogen defense.

Validation

SDS-PAGE



Recombinant CATG protein (His tag) SDS-PAGE
M: Marker; Lane 1: CATG; Lane 2: BSA