

Cathepsin G Rabbit pAb

Catalog # AP97548

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P08311
Other Accession	P08311
Host	Rabbit
Clonality	Polyclonal
Calculated MW	28837
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CTSG
Epitope Specificity	41-120/255
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the peptidase S1 family. Contains 1 peptidase S1 domain.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Cathepsin G is a serine protease, it consisting of a single polypeptide with a molecular weight of 30 kDa as determined by SDS-PAGE. Its substrates are collagen and proteoglycans. Poor regulation of Cathepsin G levels has been associated with various connective tissue disorders, for example pulmonary emphysema and cystic fibrosis.

Additional Information

Gene ID	1511
Other Names	CATG_HUMAN; CTSG; CG; 3.4.21.20; cathepsin G
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	CTSG
Function	Serine protease with trypsin- and chymotrypsin-like specificity (PubMed: 29652924 , PubMed: 8194606). Also displays antibacterial activity against Gram-negative and Gram-positive bacteria independent of its protease activity (PubMed: 2116408 , PubMed: 2117044). Prefers Phe and Tyr

residues in the P1 position of substrates but also cleaves efficiently after Trp and Leu (PubMed:[29652924](#)). Shows a preference for negatively charged amino acids in the P2' position and for aliphatic amino acids both upstream and downstream of the cleavage site (PubMed:[29652924](#)). Required for recruitment and activation of platelets which is mediated by the F2RL3/PAR4 platelet receptor (PubMed:[10702240](#), PubMed:[3390156](#)). Binds reversibly to and stimulates B cells and CD4(+) and CD8(+) T cells (PubMed:[7842483](#), PubMed:[9000539](#)). Also binds reversibly to natural killer (NK) cells and enhances NK cell cytotoxicity through its protease activity (PubMed:[9000539](#), PubMed:[9536127](#)). Cleaves complement C3 (PubMed:[1861080](#)). Cleaves vimentin (By similarity). Cleaves thrombin receptor F2R/PAR1 and acts as either an agonist or an inhibitor, depending on the F2R cleavage site (PubMed:[10702240](#), PubMed:[7744748](#)). Cleavage of F2R at '41-Arg-|-Ser-42' results in receptor activation while cleavage at '55-Phe-|-Trp-56' results in inhibition of receptor activation (PubMed:[7744748](#)). Cleaves the synovial mucin-type protein PRG4/lubricin (PubMed:[32144329](#)). Cleaves and activates IL36G which promotes expression of chemokines CXCL1 and CXCL8 in keratinocytes (PubMed:[30804664](#)). Cleaves IL33 into mature forms which have greater activity than the unprocessed form (PubMed:[22307629](#)). Cleaves coagulation factor F8 to produce a partially activated form (PubMed:[18217133](#)). Also cleaves and activates coagulation factor F10 (PubMed:[8920993](#)). Cleaves leukocyte cell surface protein SPN/CD43 to release its extracellular domain and trigger its intramembrane proteolysis by gamma-secretase, releasing the CD43 cytoplasmic tail chain (CD43-ct) which translocates to the nucleus (PubMed:[18586676](#)). Cleaves CCL5/RANTES to produce RANTES(4-68) lacking the N-terminal three amino acids which exhibits reduced chemotactic and antiviral activities (PubMed:[16963625](#)). During apoptosis, cleaves SMARCA2/BRM to produce a 160 kDa cleavage product which localizes to the cytosol (PubMed:[11259672](#)). Cleaves myelin basic protein MBP in B cell lysosomes at '224-Phe-|-Lys-225' and '248-Phe-|-Ser-249', degrading the major immunogenic MBP epitope and preventing the activation of MBP-specific autoreactive T cells (PubMed:[15100291](#)). Cleaves annexin ANXA1 and antimicrobial peptide CAMP to produce peptides which act on neutrophil N-formyl peptide receptors to enhance the release of CXCL2 (PubMed:[22879591](#)). Acts as a ligand for the N-formyl peptide receptor FPR1, enhancing phagocyte chemotaxis (PubMed:[15210802](#)). Has antibacterial activity against the Gram-negative bacteria *N.gonorrhoeae* and *P.aeruginosa* (PubMed:[1937776](#), PubMed:[2116408](#)). Likely to act against *N.gonorrhoeae* by interacting with *N.gonorrhoeae* penA/PBP2 (PubMed:[2126324](#)). Exhibits potent antimicrobial activity against the Gram-positive bacterium *L.monocytogenes* (PubMed:[2117044](#)). Has antibacterial activity against the Gram-positive bacterium *S.aureus* and degrades *S.aureus* biofilms, allowing polymorphonuclear leukocytes to penetrate the biofilm and phagocytose bacteria (PubMed:[2117044](#), PubMed:[32995850](#)). Has antibacterial activity against *M.tuberculosis* (PubMed:[15385470](#)). Mediates CASP4 activation induced by the Td92 surface protein of the periodontal pathogen *T.denticola*, causing production and secretion of IL1A and leading to pyroptosis of gingival fibroblasts (PubMed:[29077095](#)). Induces platelet aggregation which is strongly potentiated in the presence of ELANE (PubMed:[25211214](#), PubMed:[9111081](#)).

Cellular Location

Cell membrane; Peripheral membrane protein. Cytoplasmic granule. Secreted. Cytoplasm, cytosol. Lysosome. Nucleus. Note=Secreted by activated neutrophils (PubMed:[3390156](#)). Detected in synovial fluid (PubMed:[32144329](#)). Localizes to lysosomes in B cells where it is not endogenously synthesized but is internalized from the cell membrane (PubMed:[15100291](#)). Localizes to the nucleus during apoptosis (PubMed:[11259672](#)).

Tissue Location

Expressed in neutrophils (at protein level) (PubMed:[3799965](#)). Expressed in B cells (PubMed:[15100291](#))

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