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Cathepsin G Polyclonal Antibody

Catalog # AP68866

Product Information

Application	WB, E
Primary Accession	P08311
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	28837

Additional Information

Gene ID	1511
Other Names	CTSG; Cathepsin G; CG
Dilution	WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/40000. Not yet tested in other applications. E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

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

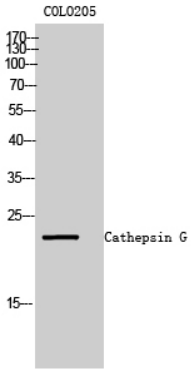
	inhibition of receptor activation (PubMed:7744748). Cleaves the synovial mucin-type protein PRG4/lubricin (PubMed:32144329). Cleaves and activates IL36G which promotes expression of chemokines CXCL1 and CXLC8 in keratinocytes (PubMed:30804664). Cleaves IL33 into mature forms which have greater activity 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)

Background

Serine protease with trypsin- and chymotrypsin-like specificity. Cleaves complement C3. Has antibacterial activity against the Gram-negative bacterium P.aeruginosa, antibacterial activity is inhibited by LPS from P.aeruginosa, Z-Gly-Leu-Phe- CH2Cl and phenylmethylsulfonyl fluoride.

Images

Western Blot analysis of COLO205 cells using Cathepsin G Polyclonal Antibody



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