

Recombinant Human CAMP Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50103

Size: 10ug, 100ug

Protein Name: Cathelicidin antimicrobial peptide (18 kDa cationic antimicrobial protein) (CAP-18) (hCAP-18) [Cleaved into: Antibacterial peptide FALL-39 (FALL-39 peptide antibiotic); Antibacterial peptide LL-37; Antibacterial peptide KR-20; Antibacterial peptide LL-23; Antibacterial peptide LL-29; Antibacterial peptide KS-30; Antibacterial peptide RK-31; Antibacterial peptide FF-33]

Synonym: CAMP, CAP18, FALL39, HSD26

UniProt ID: P49913

UniProt Link: www.uniprot.org/uniprotkb/P49913/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 170 AA

Molecular Weight: 19 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MKTQRDGHSLGRWSLVLLLLGLVMPLAIIAQVLSYKEAVLRAIDGINQRSSDANLYRLLDLDPRTMD
GDPDTPKPVSTVKETVCPRTTQQSPEDCDFKKDGLVKRCMGTVTLNQARGSFDISCDKDNKR
FALLGDFFRKSKEKIGKEFKRIVQRIKDFLRNLVPRTES

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Cathelicidin antimicrobial peptide (18 kDa cationic antimicrobial protein) (CAP-18) (hCAP-18) [Cleaved into: Antibacterial peptide FALL-39 (FALL-39 peptide antibiotic); Antibacterial peptide LL-37; Antibacterial peptide KR-20; Antibacterial peptide LL-23; Antibacterial peptide LL-29; Antibacterial peptide KS-30; Antibacterial peptide RK-31; Antibacterial peptide FF-33] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Antimicrobial protein that is an integral component of the innate immune system (PubMed:14978112, PubMed:16637646, PubMed:18818205, PubMed:22879591, PubMed:9736536). Binds to bacterial lipopolysaccharides (LPS) (PubMed:16637646, PubMed:18818205). Acts via neutrophil N-formyl peptide receptors to enhance the release of CXCL2 (PubMed:22879591). Postsecretory processing generates multiple cathelicidin antimicrobial peptides with various lengths which act as a topical antimicrobial defense in sweat on skin (PubMed:14978112). The unprocessed precursor form, cathelicidin antimicrobial peptide, inhibits the growth of Gram-negative *E.coli* and *E.aerogenes* with efficiencies comparable to that of the mature peptide LL-37 (in vitro) (PubMed:9736536).; [Antibacterial peptide LL-37]: Antimicrobial peptide that is an integral component of the innate immune system (PubMed:10417311, PubMed:15778390, PubMed:16637646, PubMed:18818205, PubMed:22879591, PubMed:32753597, PubMed:33060695, PubMed:34708076, PubMed:8681941, PubMed:9736536). Binds to bacterial lipopolysaccharides (LPS) (PubMed:10417311, PubMed:16637646, PubMed:18818205, PubMed:33060695, PubMed:9736536). Causes membrane permeabilization by forming transmembrane pores (in vitro) (PubMed:22879591, PubMed:32753597, PubMed:33060695). Causes lysis of *E.coli* (PubMed:10417311). Exhibits antimicrobial activity against Gram-negative bacteria such as *P.aeruginosa*, *S.typhimurium*, *E.aerogenes*, *E.coli* and *P.syringae*, Gram-positive bacteria such as *L.monocytogenes*, *S.epidermidis*, *S.pyogenes* and *S.aureus*, as well as vancomycin-resistant enterococci (in vitro) (PubMed:10417311, PubMed:32753597, PubMed:8681941, PubMed:9736536). Exhibits antimicrobial activity against methicillin-resistant *S.aureus*, *P.mirabilis*, and *C.albicans* in low-salt media, but not in media containing 100 mM NaCl (in vitro) (PubMed:9736536). Forms chiral supramolecular assemblies with quinolone signal (PQS) molecules of *P.aeruginosa*, which may lead to interference of bacterial quorum signaling and perturbation of bacterial biofilm formation (PubMed:34708076). May form supramolecular fiber-like assemblies on bacterial membranes (PubMed:29133814). Induces cytokine and chemokine production as well as TNF/TNFA and CSF2/GM-CSF production in normal human keratinocytes (PubMed:15778390). Exhibits hemolytic activity against red blood cells (PubMed:10417311).; [Antibacterial peptide FALL-39]: Exhibits antimicrobial activity against *E.coli* and *B.megaterium* (in vitro).; [Antibacterial peptide KR-20]: Acts synergistically with peptides KS-30 and KR-31, killing bacteria such as *S.aureus*, *E.coli* and *C.albicans* at lower concentrations when present together, and maintains activity at increased salt condition (PubMed:14978112). Does not have the ability to stimulate CXCL8/IL8 release from keratinocytes (PubMed:14978112).; [Antibacterial peptide LL-23]: Poorly active (MIC > 150 μ M) against *E.coli* strain K12 (PubMed:14978112). Is able to induce the pro-inflammatory cytokine TNF/TNFA or the chemokine CCL2/MCP1 (PubMed:14978112).; [Antibacterial peptide LL-29]: Moderately antibacterial. [Antibacterial peptide KS-30]: Moderately antibacterial (PubMed:14978112). Acts synergistically with peptides KR-20 and KR-31, killing bacteria such as *S.aureus*, *E.coli* and *C.albicans* at lower concentrations when present together, and maintain activity at increased salt condition (PubMed:14978112). Does not have the ability to stimulate CXCL8/IL8 release from keratinocytes (PubMed:14978112).; [Antibacterial peptide RK-31]: Acts synergistically with peptides KS-30 and KR-31, killing bacteria such as *S.aureus*, *E.coli* and *C.albicans* at lower concentrations when present together, and maintain activity at increased salt condition (PubMed:14978112). Does not have the ability to stimulate CXCL8/IL8 release from keratinocytes (PubMed:14978112).; [Antibacterial peptide

FF-33]: Inhibits the growth of E.coli and B.megaterium and exhibits hemolytic activity against human red blood cells.

Subcellular Localization: Secreted . Vesicle . Note=Stored as pro-peptide in granules and phagolysosomes of neutrophils (PubMed:7529412, PubMed:9736536). Secreted in sweat onto skin (PubMed:14978112).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer- composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.