

Recombinant Human TRFL Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51017

Size: 10ug, 100ug

Protein Name: Lactotransferrin (Lactoferrin) (EC 3.4.21.-) (Growth-inhibiting protein 12) (Talalactoferrin) [Cleaved into: Lactoferricin-H (Lfcin-H); Kaliocin-1; Lactoferroxin-A; Lactoferroxin-B; Lactoferroxin-C]

Synonym: LTF, GIG12, LF

UniProt ID: P02788

UniProt Link: www.uniprot.org/uniprotkb/P02788/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 710 AA

Molecular Weight: 78 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MKLVFLVLLFLGALGLCLAGRRRSVQWCAVSQPEATKCFQWQRNMRKVRGPPVSCIKRDSPIQCIQ
AIAENRADAVTLDGGFIYEAGLAPYKLRPVAAEVYGTERRQPRTHYYAVAVVKKGGSFQLNELQGLKS
CHTGLRRTAGWNVPIGTLRPFLNWTGPPEPIEA AAVARFFSASCVPGADKGQFPNLCRLCAGTGENK
CAFSSQEPYFSYSGAFKCLRDGAGDVAFIRESTVFEDLSDEAERDEYELLCPDNTRKPVDKFKDCHL
ARVPSHAVVARSVNGKEDAIWNLLRQAQEKFGKDKSPKFQLFGPSGQKDLLFKDSAIGFSRVPPRI
DSGLYLGSYFTAIQNLRKSEEEVAARRARVWCAVGEQELRKCQWWSGLSEGSVTCSSASTTED
CIALVLKGEADAMSLDGGYVYTAGKCGLPVLAENYKSSQSSDPDPNCVDRPVEGYLAVAVVRRSD
TSLTWNSVKGKKSCHTAVDRTAGWNIPMGLLFNQGTGCKFDEYFSQSCAPGSDPRS NLCALCIGDE
QGENKCV PNSNERYYGYTGAFRCLAENAGDVA FVKDVTVLQNTDGNNNEAWAKDLKLADFALLCL
DGKRKPVT EARSCHLAMAPNHAVVSRMDKVERLKQVLLHQQAKFGRNGSDCPDKFCLFQSETKNL
LFNDNTECLARLHGKTTYEKYLG PQYVAGITNLKKCSTSPLEACEFLRK

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 Lactotransferrin (Lactoferrin) (EC 3.4.21.-) (Growth-inhibiting protein 12) (Talalactoferrin) [Cleaved into: Lactoferricin-H (Lfcin-H); Kaliocin-1; Lactoferroxin-A; Lactoferroxin-B; Lactoferroxin-C] 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: Transferrins are iron binding transport proteins which can bind two Fe(3+) ions in association with the binding of an anion, usually bicarbonate.; [Lactotransferrin]: Major iron-binding and multifunctional protein found in exocrine fluids such as breast milk and mucosal secretions (PubMed:11179314, PubMed:12693969, PubMed:14573629, PubMed:1599934, PubMed:3169987, PubMed:6802759). Has antimicrobial activity, which depends on the extracellular cation concentration (PubMed:6802759). Antimicrobial properties include bacteriostasis, which is related to its ability to sequester free iron and thus inhibit microbial growth, as well as direct bactericidal properties leading to the release of lipopolysaccharides from the bacterial outer membrane (PubMed:11179314, PubMed:12693969, PubMed:14573629, PubMed:1599934, PubMed:3169987, PubMed:6802759). Can also prevent bacterial biofilm development in *P.aeruginosa* infection (PubMed:12037568). Has weak antifungal activity against *C.albicans* (PubMed:11083624). Has anabolic, differentiating and anti-apoptotic effects on osteoblasts and can also inhibit osteoclastogenesis, possibly playing a role in the regulation of bone growth (PubMed:15166119). Promotes binding of species C adenoviruses to epithelial cells, promoting adenovirus infection (PubMed:17079302). Can inhibit papillomavirus infections (PubMed:17481742). Stimulates the TLR4 signaling pathway leading to NF-kappa-B activation and subsequent pro-inflammatory cytokine production while also interfering with the lipopolysaccharide (LPS)-stimulated TLR4 signaling (PubMed:20345905). Inhibits neutrophil granulocyte migration to sites of apoptosis, when secreted by apoptotic cells (PubMed:19033648). Stimulates VEGFA-mediated endothelial cell migration and proliferation (PubMed:16842782). Binds heparin, chondroitin sulfate and possibly other glycosaminoglycans (GAGs) (PubMed:9359845). Also binds specifically to pneumococcal surface protein A (PspA), the lipid A portion of bacterial lipopolysaccharide (LPS), lysozyme and DNA (PubMed:9359845).; Lactoferricin binds to the bacterial surface and is crucial for the bactericidal functions. Has some antiviral activity against papillomavirus infection (PubMed:17481742). N-terminal region shows strong antifungal activity against *C.albicans* (PubMed:11083624). Contains two BBXB heparin-binding consensus sequences that appear to form the predominate functional GAG-binding site.; [Kaliocin-1]: Has antimicrobial activity and is able to permeabilize different ions through liposomal membranes.; [Lactoferroxin-A]: Has opioid antagonist activity (PubMed:1369293). Shows preference for mu-receptor (PubMed:1369293).; [Lactoferroxin-B]: Has opioid antagonist activity (PubMed:1369293). Shows higher degrees of preference for kappa-receptors than for mu-receptors (PubMed:1369293).; [Lactoferroxin-C]: Has opioid antagonist activity (PubMed:1369293). Shows higher degrees of preference for kappa-receptors than for mu-receptors (PubMed:1369293).; The lactotransferrin transferrin-like domain 1 functions as a serine protease of the peptidase S60 family that cuts arginine rich regions (PubMed:12535064). This function contributes to the antimicrobial activity (PubMed:12535064). Shows a preferential cleavage at -Arg-Ser-Arg-Arg-|- and -

Arg-Arg-Ser-Arg-|-, and of Z-Phe-Arg-|-aminomethylcoumarin sites (PubMed:12535064).; [Isoform DeltaLf]: Transcription factor with antiproliferative properties and ability to induce cell cycle arrest (PubMed:15222485). Binds to the DeltaLf response element found in the SKP1, BAX, DCPS, and SELENOH promoters (PubMed:22320386).

Subcellular Localization: [Isoform 1]: Secreted. Cytoplasmic granule . Note=Secreted into most exocrine fluids by various endothelial cells. Stored in the secondary granules of neutrophils.; [Isoform DeltaLf]: Cytoplasm. Nucleus. Note=Mainly localized in the cytoplasm.

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.