

Recombinant Human ELNE Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50278

Size: 10ug, 100ug

Protein Name: Neutrophil elastase (EC 3.4.21.37) (Bone marrow serine protease) (Elastase-2) (Human leukocyte elastase) (HLE) (Medullasin) (PMN elastase)

Synonym: ELANE, ELA2

UniProt ID: P08246

UniProt Link: www.uniprot.org/uniprotkb/P08246/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 267 AA

Molecular Weight: 29 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTLGRRRLACLFLACVLPALLLGGTALASEIVGGRRARPHAWPFMVSLQLRGGHFCGATLIAPNFVMS
AAHCVANVNVRAVRVVLGAHNLSRREPTRQVFVAVQRIFENGYPVNLLNDIVILQLNGSATINANVQV
AQLPAQGRRLGNGVQCLAMGWLLGRNNGIASVLQELNVTVTSLCRRSNVCTLVRGRQAGVCFG
DSGSPLVCNGLIHGIAFSVRGGCASGLYPDAFAPVAQFVNWIDSIIQRSEDNPCPHPRDPDPASRTH

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 Neutrophil elastase (EC 3.4.21.37) (Bone marrow serine protease) (Elastase-2) (Human leukocyte elastase) (HLE) (Medullasin) (PMN elastase) 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: Serine protease that modifies the functions of natural killer cells, monocytes and granulocytes (PubMed:15140022). Shows microbicidal activity in neutrophils by mediating cleavage and degradation of bacterial proteins (PubMed:10947984, PubMed:25161283). Capable of killing E.coli but not S.aureus in vitro; digests outer membrane protein A (ompA) in E.coli and K.pneumoniae (PubMed:10947984). Involved for the formation of neutrophil extracellular traps (NETs): translocates into the nucleus downstream of MPO and mediates degradation of histone H4, thereby participating to chromatin decondensation (PubMed:20974816, PubMed:25066128, PubMed:28574339). NETs are mainly composed of DNA fibers and are released by neutrophils to trap pathogens during inflammation (PubMed:20974816, PubMed:25066128, PubMed:28574339). Inhibits C5a-dependent neutrophil enzyme release and chemotaxis (PubMed:15140022). Promotes cleavage of GSDMB, thereby inhibiting pyroptosis (PubMed:36899106). Promotes blood coagulation (PubMed:20676107). Through the activation of the platelet fibrinogen receptor integrin alpha-IIb/beta-3, potentiates platelet aggregation induced by a threshold concentration of cathepsin G (CTSG) (PubMed:25211214, PubMed:9111081). Cleaves and thus inactivates tissue factor pathway inhibitor (TFPI) (PubMed:20676107, PubMed:25211214).; (Microbial infection) Inhibited reversibly by S.aureus serine protease inhibitors Eap, EapH1 and EapH2, impairing microbicidal activity in neutrophils.

Subcellular Localization: Cytoplasmic vesicle, phagosome . Lysosome . Cytolytic granule . Nucleus . Note=Localizes to azurophil granules, a type of primary lysosome found in neutrophils and monocytes that contains antimicrobial proteins (PubMed:20974816, PubMed:25066128). Translocates from azurophil granules to the nucleus downstream of MPO during formation of neutrophil extracellular traps (NETs), and is present in released NETs (PubMed:20974816, PubMed:25066128, PubMed:32434865). Localized in phagolysosomes following ingestion of E.coli by neutrophils (PubMed:10947984).

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.