

Recombinant Human IL1B Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50504

Size: 10ug, 100ug

Protein Name: Interleukin-1 beta (IL-1 beta) (Catabolin)

Synonym: IL1B, IL1F2

UniProt ID: P01584

UniProt Link: www.uniprot.org/uniprotkb/P01584/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 269 AA

Molecular Weight: 31 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAEVP ELASEMMAY YSGNEDDLFFEADGPKQMKCSFQDL DLCPLDGGIQLRISDHHYSKGFRQAAS
VVVAMDKLRKMLVPCPQTFQENDLSTFFPFIFEEPIFFDTWDNEAYVHDAPVRS LNCTLRDSQQKS
LVMSGPYELKALHLQGQDMEQQVVFSMSFVQGEESNDKIPVALGLKEKNLYLSCVLKDDKPTLQLE
SVDPKNYPKKKMEKRFVFNKIEINN KLEFESAQFPN WYISTSQAENMPVFLGGTKGGQDITDFTMQF
VSS

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 Interleukin-1 beta (IL-1 beta) (Catabolin) 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: Potent pro-inflammatory cytokine (PubMed:10653850, PubMed:12794819, PubMed:28331908, PubMed:3920526). Initially discovered as the major endogenous pyrogen, induces prostaglandin synthesis, neutrophil influx and activation, T-cell activation and cytokine production, B-cell activation and antibody production, and fibroblast proliferation and collagen production (PubMed:3920526). Promotes Th17 differentiation of T-cells. Synergizes with IL12/interleukin-12 to induce IFNG synthesis from T-helper 1 (Th1) cells (PubMed:10653850). Plays a role in angiogenesis by inducing VEGF production synergistically with TNF and IL6 (PubMed:12794819). Involved in transduction of inflammation downstream of pyroptosis: its mature form is specifically released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore (PubMed:33377178, PubMed:33883744). Acts as a sensor of *S.pyogenes* infection in skin: cleaved and activated by pyogenes SpeB protease, leading to an inflammatory response that prevents bacterial growth during invasive skin infection (PubMed:28331908).

Subcellular Localization: Cytoplasm, cytosol . Secreted . Lysosome . Secreted, extracellular exosome . Note=The precursor is cytosolic (PubMed:15192144). In response to inflammasome-activating signals, such as ATP for NLRP3 inflammasome or bacterial flagellin for NLRC4 inflammasome, cleaved and secreted (PubMed:24201029, PubMed:33377178, PubMed:33883744). Mature form is secreted and released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore (PubMed:33883744). In contrast, the precursor form is not released, due to the presence of an acidic region that is proteolytically removed by CASP1 during maturation (PubMed:33883744). The secretion is dependent on protein unfolding and facilitated by the cargo receptor TMED10 (PubMed:32272059).

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.