Document Version: V2.0

Recombinant Rat IL1A Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52285

Size: 10ug, 100ug

Protein Name: Interleukin-1 alpha (IL-1 alpha)

Synonym: Il1a

UniProt ID: P16598

UniProt Link: www.uniprot.org/uniprotkb/P16598/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 270 AA

Molecular Weight: 31 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAKVPDLFEDLKNCYSENEEYSSAIDHLSLNQKSFYDASYGSLHENCTDKFVSLRTSETSKMSTFTF
KESRVVVSATSNKGKILKKRRLSFNQPFTEDDLEAIAHDLEETIQPRSAPHSFQNNLRYKLIRIVKQEFI
MNDSLNQNIYVDMDRIHLKAASLNDLQLEVKFDMYAYSSGGDDSKYPVTLKVSNTQLFVSAQGEDK
PVLLKEIPETPKLITGSETDLIFFWEKINSKNYFTSAAFPELLIATKEQSQVHLARGLPSMIDFQIS

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 ℃ or -80 ℃. 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 alpha (IL-1 alpha) 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: Cytokine constitutively present intracellularly in nearly all resting non-hematopoietic cells that plays an important role in inflammation and bridges the innate and adaptive immune systems. After binding to its receptor IL1R1 together with its accessory protein IL1RAP, forms the high affinity interleukin-1 receptor complex. Signaling involves the recruitment of adapter molecules such as MYD88, IRAK1 or IRAK4. In turn, mediates the activation of NF-kappa-B and the three MAPK pathways p38, p42/p44 and JNK pathways. Within the cell, acts as an alarmin and cell death results in its liberation in the extracellular space after disruption of the cell membrane to induce inflammation and alert the host to injury or damage. In addition to its role as a danger signal, which occurs when the cytokine is passively released by cell necrosis, directly senses DNA damage and acts as signal for genotoxic stress without loss of cell integrity.

Subcellular Localization: Nucleus . Cytoplasm . Secreted . Note=The lack of a specific hydrophobic segment in the precursor sequence suggests that IL-1 is released by damaged cells or is secreted by a mechanism differing from that used for other secretory proteins. The secretion is dependent on protein unfolding and facilitated by the cargo receptor TMED10; it results in protein translocation from the cytoplasm into the ERGIC (endoplasmic reticulum-Golgi intermediate compartment) followed by vesicle entry and secretion. Recruited to DNA damage sites and secreted after genotoxic stress.

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.