

## Recombinant Human IL-18 Protein

|                           |                                                                   |
|---------------------------|-------------------------------------------------------------------|
| <b>Catalog Number:</b>    | 630201, 630202                                                    |
| <b>Size:</b>              | 10 µg, 100 µg                                                     |
| <b>Target Name:</b>       | IL-18, IL18, IL1F4, Interferon-gamma-inducing factor, IGIF, IL-1g |
| <b>Regulatory Status:</b> | RUO                                                               |

### PRODUCT DETAILS

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| <b>Application:</b>           | Bioassay                                                                                                                                                                                                                                         |
| <b>Format:</b>                | Lyophilized from sterile PBS, pH 7.4.                                                                                                                                                                                                            |
| <b>Expression Host:</b>       | E.coli                                                                                                                                                                                                                                           |
| <b>Species:</b>               | Human                                                                                                                                                                                                                                            |
| <b>accession number:</b>      | NP_001553.1                                                                                                                                                                                                                                      |
| <b>Sources:</b>               | A DNA sequence encoding the human IL18 (NP_001553.1) (Tyr37-Asp193) was expressed.                                                                                                                                                               |
| <b>Molecular Weight:</b>      | The recombinant human IL18 consists 157 amino acids and predicts a molecular mass of 18.2 kDa.                                                                                                                                                   |
| <b>Affinity Tag:</b>          | None                                                                                                                                                                                                                                             |
| <b>Purity:</b>                | > 95 % as determined by SDS-PAGE. > 95 % as determined by SEC-HPLC.                                                                                                                                                                              |
| <b>Endotoxin level:</b>       |                                                                                                                                                                                                                                                  |
| <b>Protein Concentration:</b> | Lyophilized                                                                                                                                                                                                                                      |
| <b>Storage and Handling:</b>  | Proteins are stable for up to twelve months from date of receipt at -20°C to -80°C. Store it under sterile conditions at -20°C to -80°C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. |

### BACKGROUND INFORMATION

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Human interleukin-18 (IL-18) is a proinflammatory cytokine belonging to the IL-1 family, with a key role in innate and adaptive immunity. It is produced by macrophages, dendritic cells, epithelial cells, and other tissues as an inactive precursor that requires cleavage by caspase-1 within the inflammasome to become biologically active. IL-18 is best known for its ability to induce interferon-gamma (IFN- $\gamma$ ) production from natural killer (NK) cells and T cells, especially in synergy with IL-12, thereby promoting T helper 1 (Th1) immune responses.

Structurally, IL-18 is a single-chain polypeptide that adopts a  $\beta$ -trefoil fold typical of IL-1 family cytokines. Its primary receptor is a heterodimer composed of IL-18R $\alpha$  (binding chain) and IL-18R $\beta$  (accessory chain), which together initiate downstream signaling through the MyD88-dependent pathway and activation of NF- $\kappa$ B and MAP kinases. A natural high-affinity antagonist, IL-18 binding protein (IL-18BP), tightly regulates IL-18 activity by preventing receptor engagement.

Dysregulated IL-18 expression is implicated in inflammatory and autoimmune diseases such as rheumatoid arthritis, psoriasis, and inflammatory bowel disease, as well as in metabolic and cardiovascular disorders. Elevated IL-18 levels are also associated with

severe infections and cytokine storm syndromes. Therapeutically, targeting IL-18 signaling—particularly through recombinant IL-18BP or neutralizing antibodies—has emerged as a strategy to control excessive inflammation. Conversely, IL-18 is being explored as an immune activator in cancer immunotherapy to enhance anti-tumor responses.

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