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1. Description

| Products | Human IL-1 β , research grade. Recombinant human interleukin 1 β . | | | | | | |
|----------------------------|--|--------------------|-----------|----|-------------|----|-------------|
| | <table border="1"> <thead> <tr> <th>Content in μg</th><th>Order no.</th></tr> </thead> <tbody> <tr> <td>10</td><td>130-093-895</td></tr> <tr> <td>25</td><td>130-095-374</td></tr> </tbody> </table> | Content in μ g | Order no. | 10 | 130-093-895 | 25 | 130-095-374 |
| Content in μ g | Order no. | | | | | | |
| 10 | 130-093-895 | | | | | | |
| 25 | 130-095-374 | | | | | | |
| Biological activity | The ED ₅₀ is ≤ 0.1 ng/mL corresponding to an activity of $\geq 1 \times 10^7$ IU/mg. ▲ Note: The ED ₅₀ is determined by proliferation assay using D10.G4.1 or TF-1 cells according to Poole and Gaines-Das ¹ and Kitamura <i>et al.</i> ² , respectively. The proliferation assay was calibrated with the first international standard for human IL-1 β (NIBSC code 86/680) provided by the WHO/ National Institute for Biological Standards and Control. | | | | | | |
| Primary structure | Single, non-glycosylated polypeptide chain (153 amino acid residues). | | | | | | |
| Molecular mass | 17.4 kDa. | | | | | | |
| Source | Produced in <i>E. coli</i> . | | | | | | |
| Product format | Lyophilized from a filtered (0.2 μ m) buffer solution. | | | | | | |
| Stabilizer | Mannitol and trehalose. | | | | | | |
| Purity | >97% as determined by SDS-PAGE analysis. | | | | | | |
| Endotoxin level | Low endotoxin (<1.0 EU/ μ g cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay. | | | | | | |
| Storage | Lyophilized Human IL-1 β , research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles. | | | | | | |
| Reconstitution | It is recommended to reconstitute lyophilized Human IL-1 β , research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 μ L. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline. | | | | | | |

1.1 Background information

Interleukin 1 β (IL-1 β) is a proinflammatory cytokine that is secreted mainly by monocytes and macrophages. IL-1 β secretion has also been reported for a variety of other cells, including B cells, NK cells, dendritic cells, astrocytes, and microglial cells. It mediates inflammatory responses in B cells, T cells, and NK cells by inducing the production of cytokines, such as IL-2, IL-3, IL-6, as well as interferons. Upon exposure to IL-1 β , endothelial cells and smooth muscle cells synthesize prostaglandins and other derivatives of arachidonic acid. In addition, IL-1 β is found in synovial fluid of arthritis patients, causing degranulation of basophils and eosinophils as well as activation of osteoclasts. IL-1 β is mitogenic for mesangial cells, glial cells, and keratinocytes. It has been shown that IL-1 β is a potent modulator of CD40L-induced cytokine secretion by human dendritic cell (DC) subsets, such as monocyte-derived dendritic cells (MoDCs), CD34⁺-derived DCs, and peripheral blood DCs.

1.2 Applications

Human IL-1 β can be used for a variety of applications including:

- Induction of Mo-DC maturation.
- Chemotaxis assays.
- Investigation of IL-1 receptor signaling.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Poole, S. and Gaines-Das, R. E. (1991) The international standards for interleukin-1 alpha and interleukin-1 beta. Evaluation in an international collaborative study. *J. Immunol. Methods* 142: 1–13.
2. Kitamura, T. *et al.* (1991) IL-1 up-regulates the expression of cytokine receptors on a factor-dependent human hemopoietic cell line, TF-1. *Int. Immunol.* 3: 571–577.
3. Luft, T. *et al.* (2002) IL-1 β enhances CD40 ligand-mediated cytokine secretion by human dendritic cells (DC): a mechanism for T cell-independent DC activation. *J. Immunol.* 168: 713–722.
4. Cunin P. *et al.* (2011) The tachykinins substance P and hemokinin-1 favor the generation of human memory Th17 cells by inducing IL-1 β , IL-23, and TNF-like 1A expression by monocytes. *J. Immunol.* 186 (7): 4175–4182.
5. Dussiau, C. *et al.* (2015) Targeting IRAK1 in T-cell acute lymphoblastic leukemia. *Oncotarget* 6: 18956–18965.
6. Bacher, P. *et al.* (2014) Antigen-specific expansion of human regulatory T cells as a major tolerance mechanism against mucosal fungi. *Mucosal Immunol* 7 (4): 916–928.
7. Schipper H. S. *et al.* (2010) A multiplex immunoassay for human adipokine profiling. *Clin. Chem.* 56 (8): 1320–1328.

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