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1. Description

Products	Human IL-10, research grade. Recombinant human interleukin 10.										
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Content in µg	Order no.										
2	130-093-947										
10	130-093-948										
100	130-098-448										
1000	130-108-985										
Biological activity	The ED ₅₀ is ≤2 ng/mL corresponding to an activity of ≥5×10 ⁵ U/mg. ▲ Note: The ED ₅₀ is determined by dose-dependent co-stimulation of MC-9 cells with human IL-4.										
Primary structure	Single, non-glycosylated polypeptide chain (161 amino acid residues, including an N-terminal methionine).										
Molecular mass	18.6 kDa.										
Source	Produced in <i>E. coli</i> .										
Product format	Lyophilized from a filtered (0.2 µm) buffer solution.										
Stabilizer	None.										
Purity	>95% as determined by SDS-PAGE analysis.										
Endotoxin level	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.										
Storage	Lyophilized Human IL-10, 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-10, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 20 µL. 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 10 (IL-10) is a α -helical homodimeric cytokine with immunosuppressive and anti-inflammatory properties. It inhibits the secretion of Th1 cytokines such as IL-1, IFN- γ , and TNF α , and the surface expression of molecules for antigen presentation. On the other hand, IL-10 promotes the humoral response, through stimulation of the Th2 response, B cell maturation, and antibody secretion. After secretion, IL-10 binds the receptor IL-10 Ra/IL-10 R1 on target cells. IL-10 is mainly secreted by monocytes, Th2 lymphocytes, regulatory T cells, some B cell subsets, dendritic cells, macrophages, natural killer cells, eosinophils, neutrophils, and mastocytes, but also keratinocytes and hepatic stellate cells.

IL-10 plays a central role in the control mechanisms that limit inflammatory responses and ultimately prevent immunopathology. Mutations of IL-10 gene can be also associated to susceptibility to infections, autoimmune diseases, and allergy.

Human IL-10 protein shares 73% homology with mouse IL-10 protein, and it can activate mouse cells, however mouse IL-10 fails to activate human cells.

1.2 Applications

Human IL-10 may be used for a variety of applications, including:

- *In vitro* inhibition of inflammatory cytokine production by Th1 cells, macrophages, and monocytes.
- *In vitro* induction of proliferation, differentiation, and antibody production by B cells, in synergy with IL-4.
- Dendritic cell-mediated *in vitro* activation of type 1 regulatory T cells (Tr1).
- *In vitro* co-stimulation of mast cells proliferation in the presence of IL-3 and IL-4.

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

2. References

1. Islam, S. A. *et al.* (2013) Identification of human CCR8 as a CCL18 receptor. *J. Exp. Med.* 210 (10): 1889–1898.

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