ProductInformation

INTERLEUKIN-4/Fc CHIMERA (NON-LYTIC)
Mouse, Recombinant
Expressed in CHO cells

Product Number **I 0281**

Product Description

Interleukin-4 (IL-4)/Fc Chimera is a soluble 98 kDa dimeric fusion protein consisting of mouse IL-4 fused to mutant mouse Fcγ2a Fc. The recombinant protein is purified from tissue culture supernatants of CHO cell transfectants. This fusion protein possesses both the biological functions of IL-4 as an immune anti-inflammatory agent and the prolonged circulating half-life determined by the Fc domain. Mutations to the complement (C1q) and FcγRI binding sites of the Fcγ2a fragment render IL-10/Fc unable to facilitate antibody directed cytotoxicity (ADCC) and complement mediated cytotoxicity (CDC).[1,2] Mouse and human IL-4 share approximately 40% homology. Mouse IL-4 is not biologically active in human cells,and human IL-4 is not biologically active in mouse cells.[3]

Interleukin-4 (IL-4) is a cytokine produced in Type 2 T helper cells. These cells are responsible for the production of a group of several lymphokines including IL-3, IL-4, IL-5, IL-6, IL-10, IL-13, and GM-CSF. IL-4 is also produced in mast cells and affects several hematopoietic cell types.[4]

IL-4 plays a role in several activation processes of B-cells as well as those of several other cell types. In B cells IL-4 promotes immunoglobulin class switching to IgE and IgG1 isotypes.[5] It up-regulates MHC class II on resting B cells and CD23 expression on both lymphocytes and monocytes.[6] IL-4 also promotes survival, growth and differentiation in both T- and B-lymphocytes, mast cells, and endothelial cells.[7,8] This cytokine inhibits the production of TNF, IL-1, and IL-6 by macrophages,[9] and the activation of NK cells.[10]

Reagent

IL-4/Fc Chimera is supplied as a frozen solution at approximately 100 µg/ml protein in 0.22 µm sterile-filtered PBS, pH 7.5 (50 mM sodium phosphate, 100 mM potassium chloride, 150 mM sodium chloride) and contains no preservatives.

Preparation Instructions

IL-4/Fc Chimera can be further diluted to the desired working concentration in sterile PBS or culture medium.

Storage/Stability

Store at –20 °C. Store working solutions at 4 °C for up to one week. Repeated freeze/thaw cycles are not recommended. Do not store in a frost-free freezer.

Product Profile

The biological activity of recombinant IL-4/Fc is determined in a proliferation assay using CTLL-2 indicator cells.[6] Optimal dilutions should be determined by each laboratory for each application.

Specific Activity: 1 to 1.5 x 10^6 Units/mg

A unit is defined using rhIL-4 as the reference in the CTLL-2 cell proliferation assay.

Purity: >98% by SDS-PAGE

Endotoxin level is ≤ 0.1 ng/µg protein

References

1. Nickerson, P., et al., Transpl. Immol., **4**, 81-85 (1996).
2. Zheng, X., et al., J. Immunol., **154**, 5590-5600 (1995).
3. Park, L., et al., J. Exp. Med., **166**, 476-488 (1987).
4. Plaut, M., et al., Nature, **339**, 64-67 (1989).
5. Kikutani, H., et al., Cell, **47**, 657-665 (1986).
6. Roehm, N. W., et al., J. Exp. Med, **160**, 679–694 (1984).
7. Paul, W.E., Blood, **77**, 1859-1870 (1991).
8. Toi, M. et al., Biochem. Biophys. Res. Commun., **174**, 1287-1293 (1991).
9. Lee, J.D., et al., J. Leukoc. Biol., **47**, 475-479 (1990).
10. Keever, C.A., et al., J Immunol., **143**, 3241-3249 (1989).

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