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ProductInformation

INTERLEUKIN-2 SOLUBLE RECEPTOR α (IL-2 sRα)
Human, Recombinant
Expressed in mouse NSO cells

Product Number **I 0779**

Product Description

Interleukin-2 soluble Receptor α (IL-2 sRα) is produced from a DNA sequence encoding the amino acid residues 1 to 213 of the human IL-2 receptor α chain precursor.[1] The mature protein, 192 amino acid residues and predicted 22 kDa molecular mass, is generated after removal of a 21 amino acid residue signal peptide. As a result of glycosylation, the recombinant protein migrates as an apparent 36 kDa protein in SDS-PAGE.

Interleukin 2 is a protein that has many immunologic functions including the ability to promote the proliferation and maturation of activated T cells. The biological activities of IL-2 are mediated through the binding of IL-2 to a multi-component cellular receptor IL-2R. The IL-2 receptor (IL-2R), a member of the cytokine receptor superfamily, mediates T cell growth and promotes cell survival, effector function, and apoptosis. Though sometimes contradictory, these effects underscore the fact that a diversity of intracellular signaling pathways are potentially activated by IL-2R.

At least 3 subunits comprise the IL-2 receptor: IL-2 Rα, IL-2 Rβ, and IL-2 Rγ chains. Human IL-2 receptor alpha (IL-2 Rα), also known as CD25, p55, and Tac (activated T cell) antigen, was originally identified as a 55 kDa membrane glycoprotein capable of binding IL-2.[2] The low affinity α chain is a 55 kDa polypeptide that is incapable of transmitting intracellular signals due to its short cytoplasmic tail. By itself, IL-2 Rα binds IL-2 with low affinity. However, when IL-2 Rα is associated with the IL-2 receptor β and γ chains, a high affinity heterotrimeric receptor complex is formed that transduces IL-2 signals. The β chain and the γ chain form a complex that binds IL-2 with high affinity, slows dissociation, and mediates signal transduction.[3]

Cells known to express α chains include activated and resting CD4+ and CD8+ T cells,[4, 5, 6] resting and activated B cells,[7] immature thymocytes,[8] endothelium,[9] embryonic fibroblasts,[10] glioblastoma (oligodendroglial) cells,[11] activated monocytes,[12] Kupffer cells, macrophages, and Langerhans cells,[13, 14] and various tumor cells.[15] A soluble form of IL-2 Rα has been reported in serum when there is increased expression on cells. Increased levels of IL-2 soluble receptor α in biological fluids correlate with increased T and B cell activation as well as immune system activation. Increased levels of IL-2 sRα has been reported in rejection episodes in transplant recipients, in inflammatory conditions such as autoimmune diseases, and in some leukemias and lymphomas.

Reagent

Recombinant Human Interleukin-2 soluble Receptor Type α is supplied as approximately 5 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline (PBS) containing 0.25 mg of bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 10 µg/ml.

Storage/Stability

Store at –20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

Recombinant Human Interleukin-2 soluble Receptor α is measured by its ability to inhibit the IL-2-dependent proliferation of a human megakaryocytic leukemic cell line, M07e.[16]

The ED_{50} for this effect is generally 0.5 to 1.0 µg/ml in the presence of 60 ng/ml of recombinant human IL-2.

The ED_{50} is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: >97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/µg protein as determined by the LAL (Limulus amebocyte lysate) method.

References

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