

Product Information

INTERLEUKIN-2 SOLUBLE RECEPTOR γ (IL-2 sR γ)

Human, Recombinant
Expressed in Sf 21 insect cells

Product Number **I 1029**

Product Description

Interleukin-2 soluble Receptor γ (IL-2 sR γ) is produced from a DNA sequence encoding the extracellular domain of human IL-2 receptor γ with 6 histidine residues added at the C-terminus.¹ In SDS-PAGE, glycosylated mature soluble IL-2 R γ migrates as a approximately 40 kDa.

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. The IL-2 receptor 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 is potentially activated by IL-2R.

At least 3 subunits comprise the IL-2 receptor: IL-2 R α , IL-2 R β , and IL-2 R γ chains. IL-2 R γ , a member of the hematopoietin receptor family, does not bind IL-2 by itself but is necessary for IL-2 signaling. The IL-2 R γ chain is a component of the functional receptor complexes for IL-2, IL-4, IL-7, IL-9, and IL-15.^{2, 3, 4} Because of this, IL-2 R γ is known as the common gamma chain (γ_c).² Ligand internalization is dependent upon the IL-2 receptor gamma chain. Also, Jak3 is activated by IL-2 R γ .⁵ IL-2 receptors exist in two affinity states on cell surfaces, the high affinity complex consisting of α , β , and γ chain heterotrimers, and the intermediate affinity complex having β and γ chain heterodimers. The β chain and the γ chain form a complex that binds IL-2 with high affinity, slows dissociation, and mediates signal transduction.⁶ In addition to their role in IL-2 mediated signal transduction, both the β chain and γ chain are necessary for IL-15 mediated signaling.

Cells known to express the γ chain include: monocytes,^{7,8} neutrophils,⁹ thymocytes,¹⁰ CD4⁺ and CD8⁺ T cells, NK cells, and B cells.⁴ The location of the molecular defects in X-linked SCID (severe combined immunodeficiency) is mapped to the IL-2 R γ gene.

Reagent

Recombinant Human IL-2 sR γ is supplied as approximately 50 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline (PBS) containing 2.5 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 500 μ g/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 IL-2 sR γ is measured by its ability to inhibit the IL-2-dependent proliferation of a human megakaryocytic leukemic cell line, M07e, in the presence of 30 μ g/ml of soluble IL-2 R β .

The ED₅₀ for this effect is generally 3 to 6 μ g/ml.

The ED₅₀ 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 amoebocyte lysate) method.

References

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