

Product Information

INTERFERON- γ RECEPTOR 1 (IFN- γ R α)

Human, Recombinant
Expressed in mouse NSO cells

Product Number **I 5277**

Product Description

Interferon- γ Receptor 1 (IFN- γ R1), also called IFN- γ R α and CDw119, is produced from a DNA sequence encoding the extracellular domain of human IFN- γ R1 protein.¹ Human IFN- γ R1, a 227 amino acid residue protein, has a calculated molecular mass of approximately 25 kDa. As a result of glycosylation, the recombinant IFN- γ R1 migrates as a 40 to 50 kDa protein in SDS-PAGE. Human and mouse IFN- γ R1 share approximately 52 % amino acid sequence identity and each interacts with IFN- γ in a strictly species-specific manner.^{2, 3}

The IFN- γ receptor complex is composed of two type I membrane proteins, IFN- γ R1 (IFN- γ R α) and IFN- γ R2 (IFN- γ R β).⁴ Both receptor proteins are members of the type II cytokine receptor family and share 52 % overall sequence identity. The IFN- γ receptor is constitutively expressed in most cell types. Soluble IFN- γ has been detected in biological fluids. IFN- γ R1 is required for ligand-binding and signaling. It binds to IFN- γ with high affinity and is a potent IFN- γ antagonist. In signal transduction, IFN- γ induces tyrosine phosphorylation of IFN- γ R1 leading to the formation of a docking site on the activated receptor for Stat1, which specifically activates IFN γ -induced gene transcription.^{2, 5, 6}

Reagent

Recombinant human IFN- γ R1 is supplied as approximately 100 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline (PBS) containing 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 100 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

The bioactivity is measured by the ability to inhibit recombinant human IFN- γ mediated protection of HeLa cells to viral lysis.⁷

The ED₅₀ for this effect is typically 1 to 3 μ g/ml in the presence of 2 ng/ml recombinant human IFN- γ R1.

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/ μ g protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Aguet, M. et al., *Cell*, **55**, 273 (1988).
2. Bach, B.A. et al., *Annu. Rev. Immunol.* **15**, 563 (1997).
3. Farrar, M.A., and Schreiber, R.D., *Annu. Rev. Immunol.* **11**, 571 (1993).
4. DeMaeyer, E., and DeMaeyer-Guignard, J., Interferons, in *The Cytokine Handbook*, 3rd Edition, Thomson, A.W., ed., Academic Press (San Diego, Ca: 1998), p. 491.
5. Silvennoinen, O., et al., *APMIS*, **105**, 497 (1997).
6. Greenlund, A.C., *EMBO J.*, **13**, 1591 (1994).
7. Meager, A., *Lymphokines and Interferons, A Practical Approach*, Clemens, J.J., et al., eds., IRL Press, Oxford, p. 129 (1987).

KAA 04/01

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.