

PRODUCT INFORMATION



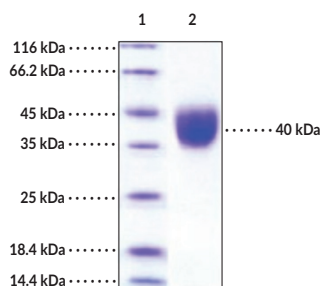
IFNGR1 Extracellular Ligand-binding Domain (human, recombinant) Item No. 32006

Overview and Properties

Synonyms: IFN γ R1, Immune Interferon Receptor 1, Interferon Gamma Receptor Alpha-chain
Source: Recombinant human C-terminal His-tagged IFNGR1 expressed in HEK293 cells
Amino Acids: 1-245
Uniprot No.: P15260
Molecular Weight: 27.3 kDa
Storage: -80°C (as supplied)
Stability: ≥ 1 year
Purity: $\geq 97\%$ estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Bioactivity: See figures for details

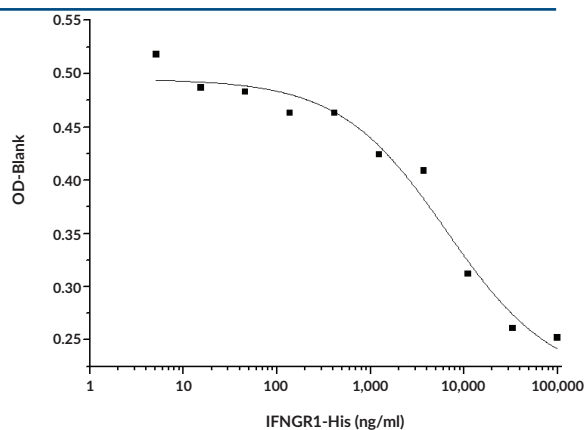
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: IFNGR1 Extracellular Ligand-binding Domain

SDS-PAGE Analysis of IFNGR1 Extracellular Ligand-binding Domain.
This protein has a calculated molecular weight of 27.3 kDa. It has an apparent molecular weight of approximately 40 kDa by SDS-PAGE under reducing conditions due to glycosylation.



IFNGR1 Inhibition of rhIFN- γ Protection. The bioactivity of IFNGR1 Extracellular Ligand-binding Domain (human, recombinant) is measured by its ability to inhibit rhIFN- γ -mediated protection of WISH cells infected with vesicular stomatitis virus. The ED₅₀ for this effect is typically 2-8 μ g/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

The interferon- γ (IFN- γ) receptor is a heterodimeric receptor with roles in innate and adaptive immunity, as well as a wide range of infectious and inflammatory diseases.^{1,2} It is composed of two IFNGR1 chains that bind IFN- γ and two non-ligand binding IFNGR2 chains that facilitate signal transduction. IFNGR1 is a transmembrane protein that is composed of an extracellular IFN- γ binding domain and an intracellular domain that contains binding motifs for JAK1 and the transcription factor STAT1, and an isoleucine-leucine sequence at residues 270 and 271 that is required for receptor internalization.² Upon IFN- γ binding, IFNGR1 is phosphorylated by JAK1 to induce STAT1 recruitment to the receptor, which is then translocated to the nucleus to initiate gene transcription.^{1,3} *Ifngr1*^{-/-} mice exhibit increased susceptibility to bacterial, parasitic, and viral infections, such as Theiler's murine encephalomyelitis, *L. major*, *L. monocytogenes*, and various mycobacteria.^{1,4} *IFNGR1* SNPs have been associated with both increased and decreased susceptibility to pulmonary tuberculosis infection in humans.¹ *IFNGR1* SNPs have also been associated with increased susceptibility to *H. pylori* infection and increased risk of developing chronic gastritis and gastric carcinomas.⁵ Cayman's IFNGR1 Extracellular Ligand-binding Domain (human, recombinant) can be used for Western blot and cell-based assays. This protein consists of 239 amino acids after removal of the signal peptide and has a calculated molecular weight of 27.3 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of Cayman's IFNGR1 Extracellular Ligand-binding Domain (human, recombinant) is 40 kDa due to glycosylation.

References

1. Naderi, M., Hashemi, M., Rezaei, M., *et al.* Association of genetic polymorphisms of IFNGR1 with the risk of pulmonary tuberculosis in Zahedan, Southeast Iran. *Tuberc. Res. Treat.* 292505 (2015).
2. Schroder, K., Hertzog, P.J., Ravasi, T., *et al.* Interferon- γ : An overview of signals, mechanisms and functions. *J. Leukoc. Biol.* **75**(2), 163-189 (2004).
3. Ahmed, C.M. and Johnson, H.M. IFN- γ and its receptor subunit IFNGR1 are recruited to the IFN- γ -activated sequence element at the promoter site of IFN- γ -activated genes: Evidence of transactivational activity in IFNGR1. *J. Immunol.* **177**(1), 315-321 (2006).
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5. Canedo, P., Corso, G., Pereira, F., *et al.* The interferon gamma receptor 1 (IFNGR1) -56C/T gene polymorphism is associated with increased risk of early gastric carcinoma. *Gut* **57**(11), 1504-1508 (2008).

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