

PRODUCT INFORMATION



Glycoprotein 130 Extracellular Domain (human, recombinant)

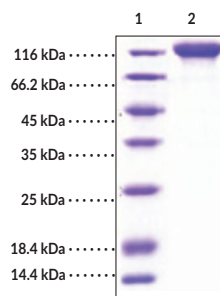
Item No. 43755

Overview and Properties

Synonyms:	CD130, CDw130, gp130, gp130/IL6ST, IL-6 Receptor Subunit β , IL-6RB, IL-6R Subunit β , Interleukin-6 Receptor Subunit β , Interleukin-6 Signal Transducer, Membrane Glycoprotein 130, Oncostatin-M Receptor Subunit α
Source:	Active recombinant C-terminal IgG1 Fc-His-tagged gp130 expressed in HEK293 cells
Amino Acids:	1-618
Uniprot No.:	P40189
Molecular Weight:	96 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 90\%$ estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/ μ g, determined by the LAL endotoxin assay
Protein Concentration:	<i>batch specific</i> mg/ml
Activity:	<i>batch specific</i> U/ml
Specific Activity:	<i>batch specific</i> U/mg

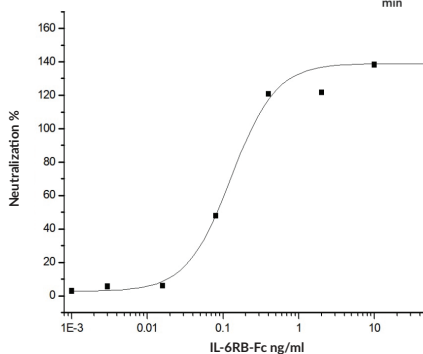
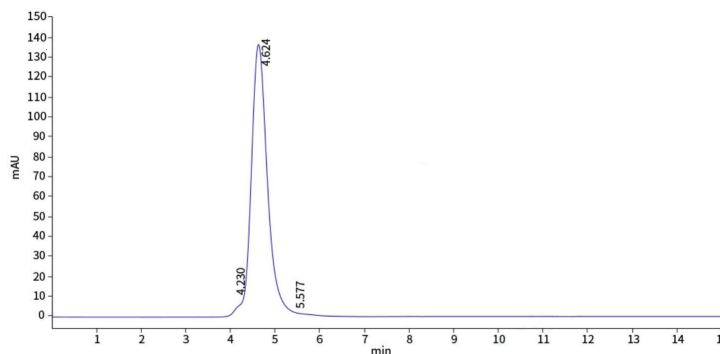
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Glycoprotein 130 Extracellular Domain

SDS-PAGE Analysis of Glycoprotein 130 Extracellular Domain.
This protein has a calculated molecular weight of 96 kDa. The monomer migrates at approximately 125-140 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Measured by its ability to inhibit the IL-6 α enhancement of IL-6 activity on M1 mouse myeloid leukemia cell. The ED₅₀ value for this effect is typically 0.2-0.8 μ g/ml in the presence of 50 ng/ml recombinant human IL-6SR and 100 ng/ml recombinant human IL-6.

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

Glycoprotein 130 (gp130), also known as IL-6 signal transducer (IL6ST), is a single-pass type I membrane protein and shared signal transducing receptor for the IL-6 cytokine family.¹ It is composed of an N-terminal immunoglobulin-like domain, two cytokine-binding domains, three fibronectin type III-like domains, a transmembrane domain, and a cytoplasmic domain, which contains JAK and STAT binding sites.²⁻⁴ Soluble forms of gp130 are formed *via* alternative splicing of the extracellular domain.³ gp130 is ubiquitously expressed and its membrane-bound form associates with membrane-bound cytokine-cytokine receptor complexes *via* the classical signaling pathway to induce JAK/STAT signaling.^{1,4,5} In contrast, in the *trans*-signaling pathway, membrane-bound cytokines and soluble cytokine receptors form a complex that can associate with either membrane-bound or soluble gp130, and high concentrations of soluble gp130 lead to signaling inhibition.^{3,5} Due to the variety of cytokines that utilize it for signaling, gp130 is involved in many biological processes, including immune signaling, organ and neural development, and bone homeostasis.⁴ Loss-of-function mutations in *IL6ST* are associated with hyper-IgE syndrome, extended Stüve-Wiedemann syndrome, or craniosynostosis, while a gain-of-function mutation is associated with inflammatory hepatocellular adenoma. Cayman's Glycoprotein 130 Extracellular Domain (human, recombinant) protein can be used for cell-based assays. This protein is a disulfide-linked homodimer. The reduced monomer, composed of gp130 (amino acids 23-618) fused to His-tagged human IgG1 Fc at its C-terminus, consists of 844 amino acids and has a calculated molecular weight of 96 kDa. As a result of glycosylation, the monomer migrates at approximately 125-140 kDa by SDS-PAGE under reducing conditions.

References

1. Minegishi, Y. Hyper-IgE syndrome, 2021 update. *Allergol. Int.* **70(4)**, 407-414 (2021).
2. Moritz, R.L., Hall, N.E., Connolly, L.M., *et al.* Determination of the disulfide structure and N-glycosylation sites of the extracellular domain of the human signal transducer gp130. *J. Biol. Chem.* **276(11)**, 8244-8253 (2001).
3. Martínez-Pérez, C., Kay, C., Meehan, J., *et al.* The IL6-like cytokine family: Role and biomarker potential in breast cancer. *J. Pers. Med.* **11(11)**, 1073 (2021).
4. Chen, Y.-H., van Zon, S., Adams, A., *et al.* The human GP130 cytokine receptor and its expression-an atlas and functional taxonomy of genetic variants. *J. Clin. Immunol.* **44(1)**, 30 (2023).
5. Rose-John, S., Jenkins, B.J., Garbers, C., *et al.* Targeting IL-6 trans-signalling: Past, present and future prospects. *Nat. Rev. Immunol.* **23(10)**, 666-681 (2023).

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