9051 Mira Mesa Blvd, #910094
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# IL6 Rat, sf9

*Interleukin-6 Rat Recombinant, sf9*
*CYK0464*

## Product Overview

| | |
|---|---|
| Name | IL6 Rat, sf9 |
| **Description** | |
| Interleukin-6 Rat Recombinant, sf9 | |
| Accession (Primary) | P20607 |
| **Synonyms** | |
| IL6, Ifnb2, ILg6. | |
| **Introduction** | |
| Interleukin-6 is a potent pro-inflammatory cytokine primarily produced by activated T cells and an assortment of other cells including endothelial cells and macrophages. IL-6 affects B and T lymphocytes and has been shown to have a role in host defense, acute phase reactions, immune responses and hematopoiesis. | |
| **Source** | |
| Sf9, Baculovirus cells. | |
| **Physical Appearance** | |
| Sterile Filtered colorless solution. | |
| **Formulation** | |
| IL6 protein solution (0.5mg/ml) contains 20% glycerol & Phosphate Buffered Saline (pH 7.4). | |
| **Stability** | |
| Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles. | |
| **Purity** | |
| Greater than 95.0% as determined by SDS-PAGE. | |
| **Amino acid sequence** | |
| ADP FPTSQVR RGDFTEDTTH NRPVYTTSQV GGLITYVLRE ILEMRKELCN GNSDCMNSDDALSENNLKLP EIQRNDGCFQ TGYNQEICLL KICSGLLEFR FYLEFVKNNL QDNKKDKARVIQSNTETLVH IFKQEIKDSY KIVLPTPTSN ALLMEKLESQ KEWLRTKTIQ LILKALEEFL KVTMRSTRQT HHHHHH | |
| **Biological Activity** | |
| Measured in a cell proliferation assay using M-NFS-60 mouse B cell. The ED50 for this effects is less or equal to 0.1 ng/ml. | |

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## Background

Production and Applications of Rat Recombinant Interleukin-6 in sf9 Cells Abstract: Interleukin-6 (IL-6) is a critical cytokine involved in various physiological processes, including inflammation, immune responses, and hematopoiesis. The production of recombinant IL-6 has paved the way for numerous applications in research and therapeutic development. This paper elucidates the production of Rat Recombinant IL-6 in sf9 cells using baculovirus expression system and explores its potential applications in immunology and disease research. Introduction: Interleukin-6 is a pleiotropic cytokine with diverse functions in immune regulation, acute phase responses, and tissue homeostasis. The ability to produce recombinant IL-6 allows researchers to investigate its role in various biological contexts and develop potential therapies. The sf9 cell line, derived from Spodoptera frugiperda insect cells, offers an efficient platform for recombinant protein expression through the baculovirus system. Methods: The production of Rat Recombinant IL-6 involves inserting the rat IL-6 gene into a baculovirus transfer vector. This vector is then co-transfected with a linearized baculovirus DNA into sf9 cells. The resulting recombinant baculovirus expresses the IL-6 protein, which is secreted into the culture medium. The expressed protein is subsequently purified using chromatographic techniques to ensure its quality and activity. Applications: Rat Recombinant IL-6 produced in sf9 cells has widespread applications. It serves as a valuable tool for investigating the mechanisms underlying IL-6-mediated immune responses, inflammation, and hematopoiesis. Furthermore, it enables the development of potential therapies targeting IL-6-related disorders, including autoimmune diseases, inflammatory conditions, and certain types of cancer. Advantages of sf9 Expression: The sf9 expression system offers several advantages, including high protein yields, post-translational modifications, and proper protein folding. This system is especially suitable for complex cytokines like IL-6, which require correct tertiary structure for optimal biological activity. Challenges and Future Prospects: While sf9-based expression of Rat Recombinant IL-6 offers numerous benefits, challenges such as optimization of expression conditions, scale-up, and quality control remain. Additionally, further research is needed to explore the therapeutic potential of Rat Recombinant IL-6 in preclinical and clinical settings. Conclusion: The production of Rat Recombinant IL-6 in sf9 cells using the baculovirus expression system provides a powerful tool for unraveling the roles of IL-6 in various biological processes. This platform holds promise for advancing our understanding of IL-6-related diseases and facilitating the development of targeted therapeutic interventions.

## References

Bibliography: Heinrich PC, Behrmann I, Haan S, et al. Principles of interleukin (IL)-6-type cytokine signalling and its regulation. Biochem J. 2003;374(Pt 1):1-20. Kishimoto T. Interleukin-6: discovery of a pleiotropic cytokine. Arthritis Res Ther. 2006;8 Suppl 2(Suppl 2):S2. Chaudhury A, Husby G, Rao KV. Production of biologically active recombinant human interleukin-6 in a baculovirus expression system. Protein Expr Purif. 2000;18(2):173-178. Luckow VA, Lee SC, Barry GF, Olins PO. Efficient generation of infectious recombinant baculoviruses by site-specific transposon-mediated insertion of foreign genes into a baculovirus genome propagated in Escherichia coli. J Virol. 1993;67(8):4566-4579. Rose-John S, Scheller J, Elson G, Jones SA. Interleukin-6 biology is coordinated by membrane-bound and soluble receptors: role in inflammation and cancer. J Leukoc Biol. 2006;80(2):227-236.

## Precautions

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IL6 Rat, sf9 is for research use only and not for use in diagnostic or therapeutic procedures.

## Target Information: ( P20607 )

## Background

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## References for protein:

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