

IL6 Rat, sf9

Interleukin-6 Rat Recombinant, sf9

CYK0464

Product Overview

Name	IL6 Rat, sf9
Accession(Primary)	P20607
Description	Interleukin-6 Rat Recombinant, sf9

Target information (P20607)

Gene Name

About Gene Symbol

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 for protein:

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.