

IL6 Human, Sf9

Interleukin-6 Human Recombinant, Sf9

CYK0462

Product Overview

Name	IL6 Human, Sf9
Accession(Primary)	P05231
Description	Interleukin-6 Human Recombinant, Sf9

Target information (P05231)

Gene Name

About Gene Symbol

Background

Production and Applications of Human Recombinant Interleukin-6 in Sf9 Cells Abstract: Interleukin-6 (IL-6) holds a central role in immune regulation, inflammation, and hematopoiesis. The production of Human Recombinant IL-6 using the Sf9 insect cell system presents a versatile approach for investigating its biological functions and potential therapeutic applications. This paper outlines the methodology of producing Human Recombinant IL-6 in Sf9 cells and explores its significance in immunological research and clinical studies. Introduction: IL-6 is a multifunctional cytokine pivotal in various physiological processes, making it a target of intensive research. The expression of Human Recombinant IL-6 facilitates investigations into its intricate mechanisms and offers potential avenues for therapeutic development. The Sf9 cell system, harnessed from *Spodoptera frugiperda*, enables efficient recombinant protein expression through baculovirus vectors. Methods: Production of Human Recombinant IL-6 involves cloning the human IL-6 gene into a baculovirus transfer vector, which is co-transfected with linearized baculovirus DNA into Sf9 cells. The resultant recombinant baculovirus generates and secretes IL-6 into the culture medium. Purification methods, such as chromatography, ensure the protein's quality and functionality. Applications: Human Recombinant IL-6 from Sf9

cells has broad applications. It serves as a critical tool for investigating IL-6's roles in immune responses, inflammation, and hematopoiesis. Additionally, it plays a crucial role in the development of therapies targeting IL-6-associated disorders like autoimmune diseases, chronic inflammatory conditions, and cancer. Sf9 Expression Advantages: The Sf9 system offers notable advantages, including post-translational modifications and protein folding, necessary for IL-6's biological activity. Sf9 cells provide a platform for generating properly folded and functional recombinant IL-6, reflecting its native structure and function. Challenges and Future Prospects: While Sf9-based expression of Human Recombinant IL-6 offers significant advantages, optimization of expression conditions and scale-up strategies remain challenges. Furthermore, the therapeutic potential of Human Recombinant IL-6 requires in-depth preclinical and clinical investigations. Conclusion: The production of Human Recombinant IL-6 in Sf9 cells through baculovirus expression offers a powerful tool to comprehend IL-6's multifaceted roles in health and disease. This technology is poised to expand our knowledge of IL-6-related conditions and catalyze the development of precision therapeutic interventions.

References for protein:

Bibliography: Kishimoto T. Interleukin-6: discovery of a pleiotropic cytokine. *Arthritis Res Ther.* 2006;8 Suppl 2(Suppl 2):S2. 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. 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.