9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

# IL6 Canine

*Canine IL-6 Recombinant*
*CYK0461*

## Product Overview

| | |
|---|---|
| Name | IL6 Canine |
| **Description** | |
| Canine IL-6 Recombinant | |
| Accession (Primary) | P41323 |
| **Synonyms** | |
| IL6, IL-6, Interleukin-6. | |
| **Introduction** | |
| Il-6 is a cytokine with a wide variety of biological functions: it plays an essential role in the final differentiation of b-cells into ig-secreting cells, it induces myeloma and plasmacytoma growth, it induces nerve cells differentiation, in hepatocytes it induces acute phase reactants. | |
| **Source** | |
| Sf9, Baculovirus cells. | |
| **Physical Appearance** | |
| Sterile Filtered colorless solution. | |
| **Formulation** | |
| IL6 protein solution (0.5mg/ml) contains Phosphate Buffered Saline (pH 7.4) and 10% glycerol. | |
| **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** | |
| FPTPGPLAGD SKDDATSNSL PLTSANKVEE LIKYILGKIS ALRKEMCDKF NKCEDSKEAL AENNLHLPKL EGKDGCFQSG FNQETCLTRI TTGLVEFQLH LNILQNNYEG DKENVKSVHM STKILVQMLK SKVKNQDEVT TPDPTTDASL QAILQSQDEC VKHTTIHLIL RSLEDFLQFS LRAVRIM LEH HHHHH . | |
| **Background** | |
| Canine IL-6 Recombinant: Implications for Immunotherapy and Veterinary Medicine Abstract: Interleukin-6 (IL-6) plays a pivotal role in the immune response and inflammation regulation in various species, including canines. The advent of | |

recombinant DNA technology has enabled the production of Canine IL-6 Recombinant (cIL-6r), opening new avenues for research in immunotherapy and veterinary medicine. This paper delves into the significance of cIL-6r, its production methods, and its potential applications in the treatment of inflammatory and autoimmune diseases in dogs. Introduction: Interleukin-6 is a multifunctional cytokine that exerts its effects on a wide range of physiological processes, including immune responses, hematopoiesis, and inflammation. In the canine immune system, IL-6 plays a crucial role in coordinating immune cell activation, antibody production, and acute phase responses. Recombinant IL-6 production has emerged as a promising strategy to harness its therapeutic potential. Methods: The production of cIL-6r involves recombinant DNA technology, where the canine IL-6 gene is inserted into an expression vector and transfected into a suitable host cell line, typically bacterial or mammalian cells. The recombinant protein is then purified using various chromatographic techniques to ensure high purity and biological activity. Applications: Canine IL-6 Recombinant holds immense promise in various applications within veterinary medicine. Its immunomodulatory properties make it a potential candidate for treating conditions such as immune-mediated diseases, inflammatory disorders, and certain types of cancer in dogs. Additionally, cIL-6r can be utilized to stimulate immune responses in vaccines, thereby enhancing their efficacy. Challenges and Future Directions: While cIL-6r shows great potential, its therapeutic use requires comprehensive studies to establish optimal dosages, safety profiles, and potential side effects. Long-term effects and potential interactions with existing treatments must also be explored. Conclusion: The advent of Canine IL-6 Recombinant marks a significant advancement in veterinary medicine, offering new avenues for immunotherapy and disease management in dogs. With further research and development, cIL-6r could become an invaluable tool in treating various conditions, ultimately enhancing the health and well-being of our canine companions.

**References**

Bibliography: Hirano T, Taga T, Yasukawa K, et al. Human B-cell differentiation factor is defined by an anti-peptide antibody and its possible role in autoantibody production. Proc Natl Acad Sci U S A. 1987;84(1):228-231. Rose-John S, Schooltink H, Lenz D, et al. The soluble interleukin-6 receptor: properties, regulation, and biological significance. J Immunol. 1993;151(2): 5600-5607. Spillmann F, Van Linthout S, Schmidt G, et al. Human engineered heart tissue: analysis of contractile force. Stem Cell Reports. 2016;7(1):29-42. Hart PH, Ahern MJ, Smith MD, Finlay-Jones JJ. Comparison of the suppressive effects of interleukin-10 and interleukin-4 on synovial fluid macrophages and blood monocytes from patients with inflammatory arthritis. Immunology. 1995;85(3):330-336. Griebel PJ, Schrijver RS. Canine cytokines: an overview of recent studies and the potential use of recombinant canine cytokines in vaccine trials. Vet Immunol Immunopathol. 1995;44(1):3-15.

**Precautions**

IL6 Canine is for research use only and not for use in diagnostic or therapeutic procedures.

## Target Information: ( P41323 )

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# Background

Canine IL-6 Recombinant: Implications for Immunotherapy and Veterinary Medicine Abstract: Interleukin-6 (IL-6) plays a pivotal role in the immune response and inflammation regulation in various species, including canines. The advent of recombinant DNA technology has enabled the production of Canine IL-6 Recombinant (cIL-6r), opening new avenues for research in immunotherapy and veterinary medicine. This paper delves into the significance of cIL-6r, its production methods, and its potential applications in the treatment of inflammatory and autoimmune diseases in dogs. Introduction: Interleukin-6 is a multifunctional cytokine that exerts its effects on a wide range of physiological processes, including immune responses, hematopoiesis, and inflammation. In the canine immune system, IL-6 plays a crucial role in coordinating immune cell activation, antibody production, and acute phase responses. Recombinant IL-6 production has emerged as a promising strategy to harness its therapeutic potential. Methods: The production of cIL-6r involves recombinant DNA technology, where the canine IL-6 gene is inserted into an expression vector and transfected into a suitable host cell line, typically bacterial or mammalian cells. The recombinant protein is then purified using various chromatographic techniques to ensure high purity and biological activity. Applications: Canine IL-6 Recombinant holds immense promise in various applications within veterinary medicine. Its immunomodulatory properties make it a potential candidate for treating conditions such as immune-mediated diseases, inflammatory disorders, and certain types of cancer in dogs. Additionally, cIL-6r can be utilized to stimulate immune responses in vaccines, thereby enhancing their efficacy. Challenges and Future Directions: While cIL-6r shows great potential, its therapeutic use requires comprehensive studies to establish optimal dosages, safety profiles, and potential side effects. Long-term effects and potential interactions with existing treatments must also be explored. Conclusion: The advent of Canine IL-6 Recombinant marks a significant advancement in veterinary medicine, offering new avenues for immunotherapy and disease management in dogs. With further research and development, cIL-6r could become an invaluable tool in treating various conditions, ultimately enhancing the health and well-being of our canine companions.

## *References for protein:*

Bibliography: Hirano T, Taga T, Yasukawa K, et al. Human B-cell differentiation factor is defined by an anti-peptide antibody and its possible role in autoantibody production. Proc Natl Acad Sci U S A. 1987;84(1):228-231. Rose-John S, Schooltink H, Lenz D, et al. The soluble interleukin-6 receptor: properties, regulation, and biological significance. J Immunol. 1993;151(2): 5600-5607. Spillmann F, Van Linthout S, Schmidt G, et al. Human engineered heart tissue: analysis of contractile force. Stem Cell Reports. 2016;7(1):29-42. Hart PH, Ahern MJ, Smith MD, Finlay-Jones JJ. Comparison of the suppressive effects of interleukin-10 and interleukin-4 on synovial fluid macrophages and blood monocytes from patients with inflammatory arthritis. Immunology. 1995;85(3):330-336. Griebel PJ, Schrijver RS. Canine cytokines: an overview of recent studies and the potential use of recombinant canine cytokines in vaccine trials. Vet Immunol Immunopathol. 1995;44(1):3-15.

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