Data Sheet (Cat.No.TMPY-02586)

TargetMol

IL-2 Protein, Canine, Recombinant (C147S)

General Information

Synonyms:	interleukin 2
Protein Construction:	A DNA sequence encoding the mature form of canine IL2 (Q29416) (Ala 21-Thr 155, 147Cys/Ser) was expressed, with an initial Met at the N-terminus. Predicted N terminal: Met
Species:	Canine
Expression Host:	E. coli
Accession:	Q29416
Molecular Weight:	15.6 kDa (predicted); 15 kDa (reducing conditions)

QC Testing

Biological Activity:	1. Measured by its binding ability in a functional ELISA. 2. Immobilized recombinant Canine IL2 at 10 μg/mL can bind recombinant human IL2Ra-Fc with a linear range of 0.3125-20 μg/ml.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Interleukin-2, also known as a T-cell growth factor, TCGF, Aldesleukin, and IL2, is a secreted protein that belongs to the IL-2 family. Interleukin-2 / IL-2 was the first interleukin molecule to be discovered. Interleukin-2 / IL-2 molecule was first purified to homogeneity by immunoaffinity chromatography by Kendall Smith and his team at Dartmouth Medical School. Interleukin-2 / IL-2 was also the first cytokine shown to mediate its effects via a specific

IL-2 receptor, and it was also the first interleukin to be cloned and expressed from a complementary DNA (cDNA) library. Interleukin-2 / IL-2 was designated number 2 because Smith's data at the time indicated that IL-1, produced by macrophages, facilitates IL-2 production by T lymphocytes (T cells).Interleukin-2 / IL-2 is produced by T-cells in response to antigenic or mitogenic stimulation, this protein is required for T-cell proliferation and other activities crucial to regulation of the immune response. Interleukin-2 / IL-2 is normally produced by the body during an immune response. When environmental substances (molecules or microbes) gain access to the body, these substances (termed antigens) are recognized as foreign by antigen receptors that are expressed on the surface of lymphocytes. Antigen binding to the T cell receptor (TCR) stimulates the secretion of Interleukin-2 / IL-2 and the expression of IL-2 receptors IL-2R. The IL-2 / IL-2R interaction then stimulates the growth, differentiation, and survival of antigen-selected cytotoxic T cells via the activation of the expression of specific genes. Interleukin-2 / IL-2 can stimulate B-cells, monocytes, lymphokine-activated killer cells, natural killer cells, and glioma cells. The World Reference Standard for Interleukin-2 / IL-2 is produced by the National Institute of Biological Standards and Control in the UK. A recombinant form of Interleukin-2 / IL-2 for clinical use is manufactured by Chiron Corporation with the brand name Proleukin. It has been approved by the Food and Drug Administration (FDA) for the treatment of cancers (malignant melanoma, renal cell cancer), and is in clinical trials for the treatment of chronic viral infections, and as a booster (adjuvant) for vaccines. The use of Interleukin-2 / IL-2 in HIV therapy is ineffective.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Smith KA, et al.,1980, J. Exp. Med.151 (6): 1551-6.
Smith KA, et al.,1980, Nature. 287 (5785): 853-5.
Taniguchi T, et al.,1983, Nature. 302 (5906): 305.
Cantrell DA, et al.,1984, Science. 224 (4655): 1312-6.
Smith KA, et al.,1988, Science. 240 (4856): 1169-76.
Wang X. et al., 2005, Science 310:1159-63.
Stauber D.J. et al., 2006, Proc. Natl. Acad. Sci. USA. 103: 2788-93.