

IL-1 alpha/IL-1A Protein, Rat, Recombinant

General Information

Synonyms:	interleukin 1, alpha;IL-1 α /IL1A;interleukin 1, α
Protein Construction:	A DNA sequence encoding the rat IL1A (NP_058715.1) (Ser115-Ser270) was expressed. Predicted N terminal: Ser115
Species:	Rat
Expression Host:	E. coli
Accession:	P16598
Molecular Weight:	17.80 kDa (predicted)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE.
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m 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

IL-1 alpha is a member of the interleukin 1 cytokine family. Cytokines are proteinaceous signaling compounds that are major mediators of the immune response. They control many different cellular functions including proliferation, differentiation, and cell survival/apoptosis but are also involved in several pathophysiological processes including viral infections and autoimmune diseases. Cytokines are synthesized under various stimuli by a variety of cells of both the innate (monocytes, macrophages, dendritic cells) and adaptive (T- and B-cells)

immune systems. Cytokines can be classified into two groups: pro- and anti-inflammatory. Pro-inflammatory cytokines, including IFN γ , IL-1, IL-6, and TNF- α , are predominantly derived from the innate immune cells and Th1 cells. Anti-inflammatory cytokines, including IL-10, IL-4, IL-13, and IL-5, are synthesized from Th2 immune cells. IL-1 α is a pleiotropic cytokine involved in various immune responses, inflammatory processes, and hematopoiesis. It is produced by monocytes and macrophages as a proprotein, which is proteolytically processed and released in response to cell injury, and thus induces apoptosis. IL-1 α stimulates thymocyte proliferation by inducing IL-2 release, B-cell maturation and proliferation, and fibroblast growth factor activity.

Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

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- March CJ, et al.(1985) Cloning, sequence and expression of two distinct human interleukin-1 complementary DNAs. *Nature*. 315(6021):641-7.
- Bankers-Fulbright JL, et al.(1996) Interleukin-1 signal transduction. *Life Sci*. 59(2):61-83.
- Dinarello CA, et al.(1997) Induction of interleukin-1 and interleukin-1 receptor antagonist. *Semin Oncol*. 24 (3 Suppl 9):S9-81-S9-93.

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