

Product Information

Anti-Interleukin-7

Developed in Goat
Affinity Isolated Antibody

Product Number **I 2782**

Product Description

Anti-Mouse Interleukin-7 is developed in goat using a purified recombinant mouse interleukin-7 (IL-7) expressed in *Escherichia coli* as immunogen. Affinity isolated antigen specific antibody is obtained from goat anti-IL-7 antiserum by immuno-specific purification which removes essentially all goat serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-Mouse Interleukin-7 recognizes recombinant mouse IL-7 by ELISA, neutralization, and immunoblotting (molecular mass approximately 15 kDa). Although mouse and human IL-7 have approximately 65% amino acid sequence homology and both proteins exhibit cross-species activity, the antibody will not neutralize the biological activity of recombinant human IL-7. Based on ELISA and immunoblotting, the antibody shows less than 5% cross-reactivity with recombinant human IL-7.

Interleukin-7 (IL-7) is a lymphoid cell growth factor that affects pre-B, pro-B, and early T cells.¹ It was previously known as pre-B cell growth factor and lymphopoietin-1.^{2,3} IL-7 supports the growth of early B cells from long-term lymphoid bone marrow cultures.³ It is mitogenic to thymocytes and enhances the response of cells to other stimuli such as polyhydroxyalkanoate (PHA) and concanavalin A (ConA).⁴ IL-7 stimulates the proliferation of CD4⁺/CD8⁺ cells.^{4,5} The proliferative response of thymocytes to IL-7 is not affected by antibodies to the T cell growth factors such as IL-2, IL-4, and IL-6, suggesting that IL-7 is capable of stimulating T cell proliferation through a pathway independent of the known T cell growth factors.⁴ Mature T cells respond to IL-7 and Con A, but not to IL-7 alone. In myeloid lineage cells, IL-7 up-regulates the production of pro-inflammatory cytokines and stimulates the tumorocidal activity of monocytes/macrophages. IL-7 is expressed by adherent stromal cells from various tissues.

Reagent

Anti-Mouse Interleukin-7 is supplied as approximately 100 µg of antiserum lyophilized from a 0.2 µm filtered solution of phosphate buffered saline (PBS).

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of sterile phosphate buffered saline to produce a 0.1 mg/ml stock solution of antibody.

Storage/Stability

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing. Do not store in frost-free freezer.

Product Profile

Anti-Mouse Interleukin-7 has the ability to neutralize the bioactivity of recombinant mouse IL-7 on PHA activated human peripheral blood mononuclear cells (PBMC). Recombinant mouse IL-7 is incubated with various concentrations of the antibody for 1 hour at 37 °C in a 96 well plate. Following this pre-incubation, PBMCs are added to the wells. The assay mixture in a total volume of 100 µl, containing antibody at concentrations of 0.01-100 µg/ml, recombinant mouse IL-7 at 1.5 ng/ml, and cells at 2 x 10⁵ cells/ml, is incubated at 37 °C for 48 hours in a humidified CO₂ incubator. The mixture is pulsed with ³H-thymidine during the final 4 hours. The cells are detached and harvested onto glass fiber filters, and the ³H-thymidine incorporated into the DNA is measured.

The Neutralization Dose₅₀ (ND₅₀) for anti-mouse IL-7 is approximately 0.2-0.4 µg/ml in the presence of 1.5 ng/ml of recombinant mouse IL-7 (Prod. No. I 4892) using human peripheral blood mononuclear cells activated with PHA for 5 days.

The ND₅₀ is the concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when that cytokine is present

at a concentration just high enough to elicit a maximum response.

The exact concentration of antibody required to neutralize the recombinant mouse IL-7 activity is dependent on the cytokine concentration, cell type, growth conditions, and the type of activity.

For immunoblotting, a working antibody concentration of 0.1-0.2 µg/ml is recommended. The detection limit for recombinant mouse IL-7 (Prod. No. I 4892) is approximately 5.0 ng/lane under non-reducing and reducing conditions.

For ELISAs, a working antibody concentration of 0.5-1.0 µg/ml is recommended. The detection limit for recombinant mouse IL-7 (Prod. No. I 4892) is approximately 0.3 ng/well.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilutions by titration.

Endotoxin level is < 10 ng/mg antibody as determined by the LAL (*Limulus* ameobocyte lysate) method.

References

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2. Namen, A. E., et al., Nature, **333**, 571 (1988).
3. Namen, A. E., et al., J. Exp. Med., **167**, 988 (1988).
4. Conlon, P. J., et al., Blood, **74**, 1368 (1989).
5. Suda, T., et al., J. Immunol., **144**, 3039 (1990).

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