



Genorise[®] Recombinant Ovine IL-7

Catalog Number: GR123039

Background

IL-7 is a hematopoietic growth factor secreted by stromal cells in the bone marrow and thymus. It is also produced by keratinocytes,^[1] dendritic cells,^[2] hepatocytes,^[3] neurons, and epithelial cells,^[4] but is not produced by normal lymphocytes.^[5] IL-7 stimulates the differentiation of multipotent (pluripotent) hematopoietic stem cells into lymphoid progenitor cells (as opposed to myeloid progenitor cells where differentiation is stimulated by IL-3). It also stimulates proliferation of all cells in the lymphoid lineage. It is important for proliferation during certain stages of B-cell maturation, T and NK cell survival, development and homeostasis. IL-7 is a cytokine important for B and T cell development. IL-7 and the hepatocyte growth factor (HGF) form a heterodimer that functions as a pre-pro-B cell growth-stimulating factor. This cytokine is found to be a cofactor for V(D)J rearrangement of the T cell receptor beta (TCR β) during early T cell development.^[6] IL-7 can be produced locally by intestinal epithelial and epithelial goblet cells, and may serve as a regulatory factor for intestinal mucosal lymphocytes. Knockout studies in mice suggested that IL-7 plays an essential role in lymphoid cell survival. IL-7 binds to the IL-7 receptor, a heterodimer consisting of Interleukin-7 receptor alpha and common gamma chain receptor,^[7] resulting in a cascade of signals important for T-cell development within the thymus and survival within the periphery. IL-7 promotes hematological malignancies (acute lymphoblastic leukemia, T cell lymphoma).^[18]

References

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2. Kröncke R, et al. (1996). *Eur. J. Immunol.* 26 (10): 2541–4.
3. Sawa Y, et al. (2009). *Immunity.* 30 (3): 447–57.
4. Watanabe M, et al. (1995). *J. Clin. Invest.* 95 (6): 2945–53.
5. Fry TJ, Mackall CL (2002). *Blood.* 99 (11): 3892–904.
6. Muegge K, Vila MP, Durum SK (July 1993). "Interleukin-7: a cofactor for V(D)J rearrangement of the T cell receptor beta gene". *Science.* 261 (5117): 93–5.
7. Noguchi M, et al. (1994). *Science.* 262 (5141): 1877–80.
8. Or R, et al. (1998). *Cytokines Cell. Mol. Ther.* 4 (4): 287–94.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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Description

Size: 5 µg

Sources: expressed in *E. coli*.

Composition: Ser26-His176

Accession #: NP_001009777.1

Molecular weight: 17 kDa

Activity: Measured in a cell proliferation assay using PHA-activated human peripheral lymphocytes. Yokota T et al. (1986) Proc Natl Acad Sci USA 83:5894.

The ED50 for this effect is typically 0.1-0.5 ng/ml.

Endotoxin level: < 0.01 EU per 1 µg of the protein by the LAL method.

Purity: > 97%, by SDS-PAGE under reducing conditions and visualized by silver staining.

Formulation: Lyophilized from a 0.2 µm filtered solution in PBS.

Reconstitution: Reconstitute at 50-100 µg/ml in sterile PBS and 0.05% azide and store at -20°C ~ -70°C for up to 3 months.

Shipping and storage: The product is shipped at 4 °C with ice pad or at ambient temperature.

Upon receipt, store it immediately at -20°C to avoid loss of activity and use it in 6 months.

Related products

1. GR239031 96-well microplate sealer plastic, pack of 100
2. GR238016 50 ml Reagent Reservoir, 100/case, 5 packs/case (pack of 20)
3. GR238004 Tissue Culture 96-well Microplate, individually packed, Case of 50
4. GR238002 Microplate 12x8-Well Strip High Binding, Case of 50
5. GR238003 Microplate 12x8-Well Strip Medium Binding, Case of 50
6. GR238032 42592 Costar Stripwell Microplate 1 x 8 Flat Bottom, High Binding, Case of 100
7. GR238001 468667 Thermo Microplate 12x8-Well Strip Nunc Maxisorp F8, Case of 60
8. GR238019 1.5 ml Microcentrifuge tube with screw cap and free-standing, pack of 500