Recombinant Human IL-11

Information

Accession #	P20809.1
Alternate Names	Human IL11; IL11; IL-11; Oprelvekin; interleukin 11; interleukin-11; Adipogenesis inhibitory factor
Source	Human embryonic kidney cell, HEK293-derived human IL-11 protein
Protein sequence	Pro22-Leu199
M.Wt	19.1 kDa
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.
Concentration	0. 2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Measured in a cell proliferation assay using T11 mouse plasmacytoma cells. The EC50 for this effect is 0.02-0.10 ng/mL
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

Interleukin-11 (IL-11) is a pleiotropic cytokine in the IL-6 family, which also includes LIF, CNTF, Oncostatin M, Cardiotrophin-1, IL-27 and IL-31 [1-3]. In humans, IL-11 was also independently discovered as an adipogenesis inhibitory factor (AGIF) [3]. The human IL-11 cDNA encodes a 199 amino acid (aa) precursor, which generates a 178 aa, 19 kDa mature unglycosylated protein. Mature human IL-11 shares 88%, 88%, and 96% aa sequence identity with mouse, rat and canine IL-11, respectively. IL-11 is secreted by osteoblasts, synoviocytes, fibroblasts, chondrocytes, intestinal myofibroblasts, and trophoblasts, among other cell types [1]. It is found in the plasma mainly during inflammation, such as that associated with viral infection, cancer, or inflammatory arthritis, and is considered to be primarily anti-inflammatory [1]. It stimulates hematopoiesis

and thrombopoiesis, regulates macrophage differentiation, and confers mucosal protection in the intestine [1]. It has also been found to enhance T cell polarization toward Th2, promote B cell IgG production, increase osteoclast bone absorption, protect endothelial cells from oxidative stress, and regulate epithelial proliferation and apoptosis [1]. IL-11 synergizes with several other cytokines to produce these effects, and its effects overlap with those of IL-6 [1]. IL-11 receptor activation requires formation of a complex of two IL-11 molecules with two molecules of the ligand-binding IL-11 R alpha subunit and two molecules of the ubiquitously expressed cell signaling beta subunit, gp130 [4]. A soluble form of IL-11 R alpha can bind IL-11 and either form a signaling complex with gp130 on the cell surface, or inhibit cell surface IL-11 R alpha /gp130 signaling [5-7].

Reference

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[4]. Barton, V.A. et al. (2000) J. Biol. Chem. 275:36197.

[5]. Curtis, D.J. et al. (1997) Blood 90:4403.

[6]. Baumann, H. et al. (1996) J. Immunol. 157:284.

[7]. Karow, J. et al. (1996) Biochem. J. 318:489.

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