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# Human IL-11 Recombinant Protein

10 µg

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**For Research Use Only. Not for Use in Diagnostic Procedures.****MW (kDa):**  
19.3**UniProt ID:**  
#P20809**Entrez-Gene Id:**  
3589

## Background

Interleukin-11 (IL-11) was initially cloned as a mediator of plasmacytoma cell proliferation and was later found to exhibit a wide variety of biological effects in neural cells as well as in the hematopoietic and immune systems (1). IL-11 belongs to the interleukin-6 (IL-6)-type subfamily of long-chain helical cytokines, including IL-6, ciliary neurotrophic factor (CNTF), leukemia inhibitory factor (LIF), oncostatin M, and cardiotrophin-1, which all share the glycoprotein gp130 as a signal transducing receptor component. IL-11 acts on cells expressing gp130 and the IL-11 receptor (IL-11R)  $\alpha$  subunit. Both receptor subunits belong to the family of class I cytokine receptors. The complex of IL-11 and IL-11R triggers the activation of gp130 most likely by enforcing gp130 homodimerization (2). As a consequence of gp130 activation, several cytoplasmic signal transduction cascades are initiated from the Janus kinase (Jak)/signal transducer and activator of transcription (Stat) pathway, which has attracted considerable attention. Initiation of the Jak/Stat pathway in response to IL-11 requires Jak1 and leads predominantly to the activation of Stat3 (3,4).

## Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 µg hIL-11.

## Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

## Source / Purification

Recombinant human IL-11 was expressed in *E. coli* and is supplied in a lyophilized form.

## Bioactivity

The bioactivity of recombinant hIL-11 was determined in a TF-1 cell proliferation assay. The ED<sub>50</sub> of each lot is less than or equal to 10 ng/ml.

## Background References

1. Du, X. and Williams, D.A. (1997) *Blood* 89, 3897-908.
2. Tacke, I. et al. (1999) *Eur J Biochem* 265, 645-55.
3. Dahmen, H. et al. (1998) *Biochem J* 331 (Pt 3), 695-702.
4. Kiessling, S. et al. (2004) *J Biol Chem* 279, 10304-15.

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