Sterile

#8903

Human Interleukin-10 (hIL-10)

Cell Signaling TECHNOLOGY®

☐ SC 10 µg (With Carrier)
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rev. 02/09/17

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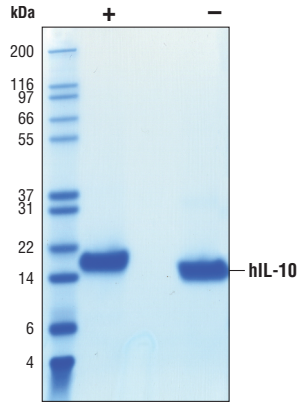
For Research Use Only. Not For Use In Diagnostic Procedures.

Source: Recombinant human IL-10 (hIL-10) Ser19-Asn178 (Accession # NM_000572) was produced in *E. coli* at Cell Signaling Technology.

Molecular Characterization: Recombinant hIL-10 does not have a Met on the amino terminus and has a calculated MW of 18,647. DTT-reduced protein migrates as an 18 kDa polypeptide and non-reduced protein migrates as a 16 kDa polypeptide due to intramolecular cystines. The expected amino-terminal SPGQG of recombinant hIL-10 was verified by amino acid sequencing.

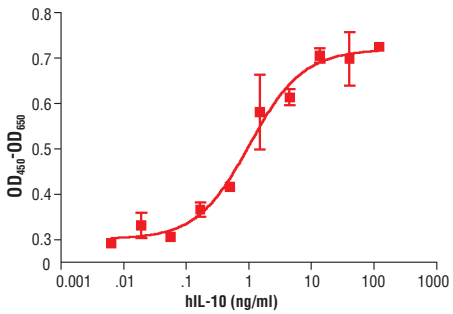
Endotoxin: Less than 0.01 ng endotoxin/1µg hIL-10.

Purity: > 98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hIL-10. All lots are greater than 98% pure.

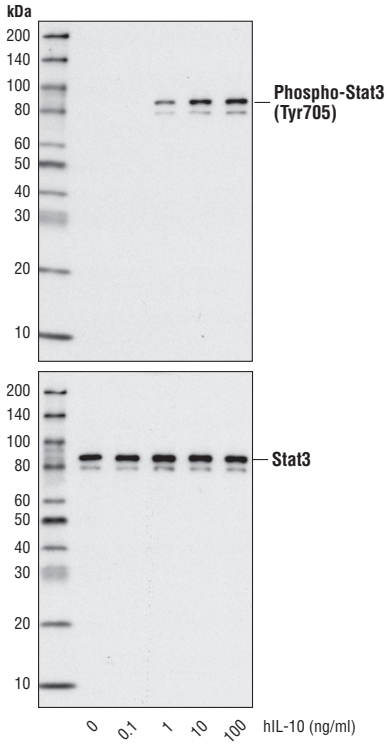


The purity of recombinant hIL-10 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hIL-10 and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hIL-10 was determined in a MC/9 cell proliferation assay. The ED_{50} of each lot is between 0.3-1.3 ng/ml.



The proliferation of MC/9 cells treated with increasing concentrations of hIL-10 in the presence of 10 pg/ml mouse IL-4 was assessed. After 72 hours treatment with hIL-10, cells were incubated with a tetrazolium salt and the OD_{450} - OD_{650} was determined.



Western blot analysis of extracts from MC/9 cells, untreated or treated with hIL-10 for 20 minutes, using Phospho-Stat3 (Tyr705) (D3A7) XP™ Rabbit mAb #9145 (upper) or Stat3 Antibody #9132 (lower).

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg hIL-10.

Carrier free: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

Reconstitution:
With carrier: Add sterile PBS, or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final hIL-10 concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS, or PBS containing protein to minimize absorption of hIL-10 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hIL-10 should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at 4°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: IL-10 is an anti-inflammatory cytokine that is produced by T cells, NK cells and macrophages (1,2). IL-10 initiates signal transduction by binding to a cell surface receptor complex consisting of IL-10 RI and IL-10 RII (1). Binding of IL-10 leads to the activation of Jak1 and Tyk2, which phosphorylates Stat-3 (1,3). The anti-inflammatory activity of IL-10 is due to its ability to block signaling through other cytokine receptors, notably IFNγ receptor, by upregulating expression of SOCS-1 (1,3). In addition, IL-10 promotes T cell tolerance by inhibiting tyrosine phosphorylation of CD28 (4,5). IL-10 is an important negative regulator of the immune response, which allows for maintenance of pregnancy (1). In contrast, increased IL-10 levels contribute to persistent *Leishmania major* infections (6).

Background References:

(1) Pestka, S. et al. (2004) *Immunol Rev* 202, 8-32.
(2) Akuffo, H. et al. (1999) *Clin Exp Immunol* 117, 529-34.
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(4) Akdis, C.A. and Blaser, K. (2001) *Immunology* 103, 131-6.
(5) Akdis, C.A. et al. (2000) *FASEB J* 14, 1666-8.
(6) Von Stebut, E. (2000) *Eur J Dermatol* 17, 115-22.