Sterile

Human Interleukin-6 Receptor α (hIL-6Rα)

Source: Recombinant hIL-6Rα Leu20 - Asp 358 (Accession #NP_000556) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant hIL-6Rα has a calculated MW of 37,871. DTT-reduced and non-reduced protein migrate as 66 kDa polypeptides. Lower mobility and heterogeneity in SDS-PAGE are due to glycosylation. The expected amino terminus of recombinant hIL-6Rα was verified by amino acid sequencing.

Endotoxin: Less than 0.01 ng endotoxin/1 µg hIL-6Rα.

Purity: >90% as determined by SDS-PAGE of 6 µg reduced (+) and nonreduced (-) recombinant hIL-6Rα. All lots are greater than 90% pure.

Bioactivity: The activity of hIL-6Rα was determined by assessing its ability to enhance IL-6 mediated inhibition of M1 cell proliferation. The ED₅₀ of each lot is between 2 and 15 ng/ml.

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of hIL-6Rα in 20 mM Tris, pH 7.2 containing 20 µg BSA per 1 µg hIL-6Rα. Carrier free: Lyophilized from a 0.22 µm filtered solution of hIL-6Rα in 20 mM Tris, pH 7.2.

Reconstitution: With carrier: Add sterile 20 mM Tris, pH 7.2 or 20 mM Tris, pH 7.2 containing 1% bovine or human serum albumin or 5-10% FBS to a final hIL-6Rα concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Carrier free: Add sterile 20 mM Tris, pH 7.2 or 20 mM Tris, pH 7.2 containing protein to minimize absorption of hIL-6Rα to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hIL-6Rα should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at -20ºC for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4ºC for 2 months and at -20ºC for 6 months. Avoid repeated freeze-thaw cycles. Maintain sterility. Storage at -20ºC should be in a manual defrost freezer.

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

Background: The IL-6 receptor is a heterodimeric complex that consists of a ligand-binding IL-6 receptor α (IL-6Rα) subunit and a signaling component, gp130 (1). Binding of IL-6 to IL-6Rα results in dimerization of receptor with gp130 and subsequent STAT3 activation (1). IL-6Rα is cleaved from the cell surface by ADAM17 (1,2). In humans, soluble IL-6Rα is also generated via alternatively spliced mRNA (1,3). Soluble IL-6Rα binds to IL-6 and can stimulate signaling via membrane bound gp130 in a process known as “trans-signaling” (1). It is through trans-signaling that IL-6 stimulates cells that do not express membrane bound IL-6Rα (1).

Background References:
(3) Lust, J.A. et al. (1992) Cytokine 4, 96-100.