Human Interleukin-4 (hIL-4)

Source: Recombinant human IL-4 (hIL-4) His25-Ser153 (Accession #AF395008) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant hIL-4 does not have a Met on the amino terminus and the nonglycosylated protein has a calculated MW of 14,963. DTT-reduced and non-reduced protein migrate as larger 20 kDa polypeptides due to glycosylation, with non-reduced having slightly greater mobility due to an intramolecular cystine. The expected amino-terminal HKCDI of recombinant hIL-4 was verified by amino acid sequencing.

Endotoxin: Less than 0.01 ng endotoxin/1 µg hIL-4.

Purity: >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hIL-4. All lots are greater than 98% pure.

Bioactivity: The bioactivity of recombinant hIL-4 was determined in a TF-1 cell proliferation assay. The ED50 of each lot is between 80-250 pg/ml.

Western blot analysis of extracts from TF-1 cells, untreated or treated with hIL-4 for 20 minutes, using Phospho-Stat6 (Tyr641) (C11A12) Rabbit mAb Antibody #9364 (upper) and Stat6 Antibody #9362 (lower).

The purity of recombinant hIL-4 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hIL-4 and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hIL-4 was determined in a TF-1 cell proliferation assay. The ED50 of each lot is between 80-250 pg/ml.

Applications:

1. Signaling initiated via type I receptor results in the activation of Jak1/Stat6, Jak3 and the PI3K/Akt pathways (3).
2. IL-4 binds to two distinct receptors, the type I receptor and type II receptor. Type I receptor is a heterodimer consisting of IL-4Rα chain and the common gamma chain, γc (3,4). Type II receptor, which is shared with IL-13, is a heterodimer of IL-4Rxα and IL-13Rxα1. Signaling initiated via type I receptor results in the activation of Jak1/Stat6, Jak3 and the PI3K/Akt pathways (3).
3. The type II receptor activates the Jak1/Stat6 and the Tyk2/Stat3 pathways (3).

Background References: