Human Interleukin-21 (hIL-21)

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

Background: IL-21 is produced by Th17, T follicular helper (Tfh) and NKT cells (1-3). Targets include T cells, B cells, NK cells and dendritic cells (1-3,5). IL-21 induces proliferation and activation of NK cells, thereby up-regulating IFN-γ production and cytotoxic activity (1,3,4). IL-21 increases proliferation and survival of CD40-primed B cells (1,2) and appears to have a significant role in plasma cell differentiation (2). IL-21 binds to a complex consisting of IL-21Rα and the common γ chain, γc. IL-21 binding activates the Jak1/Jak3, Stat1, Stat3 and Stat5 pathway. IL-21 binding can also activate the MAP kinase and PI3K/Akt pathways.

Background References:

Source/Purification: Recombinant human IL-21 was expressed in E. coli and is supplied in a lyophilized form. A greater than 95% purity was determined by SDS-PAGE. Endotoxin levels are less than or equal to 1 EU / 1 µg hIL-21.

Directions For Use: Working concentration of hIL-21 generally ranges from 0.1-10 ng/ml.

Activity: The bioactivity of recombinant hIL-21 was determined by its ability to induce IFN-γ production in B9 cells. The EC50 of each lot is between 25-50 ng/ml.

Storage: Recombinant human IL-21 is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/ml which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long term storage.

Western blot analysis of extracts from Jurkat cells, untreated or treated with hIL-21 for 20 minutes, using Phospho-Stat3 (Tyr705) (D3A7) XP™ Rabbit mAb #9145 (upper) or Stat3 (124H6) Mouse mAb #9139 (lower).

The purity of recombinant hIL-21 was determined by SDS-PAGE of 1.5 µg reduced (+) and non-reduced (-) recombinant hIL-21 and staining overnight with Coomassie Blue.

Serial dilutions of Human IL-21 were added to B9 cells. Cell proliferation was assessed after 72 hours by measuring OD490.