

The HumanKine® Advantage: IL-2

Proteintech's HumanKine® recombinant IL-2 is 40x more active than leading competitor IL-2

Interleukin-2 (IL-2) is a cytokine secreted by T cells that signals through heterodimerization of the IL-2R β and IL-2R γ subunits. It acts as a growth-factor for a wide range of leukocytes; inducing proliferation in CD4+ and CD8+ T cells, maintaining normal T regulatory cells function, and is essential in immune homeostasis and self-tolerance.

IL-2 can be used to stimulate cultured T cells, clonal expansion and proliferation of T cell populations, or to maintain normal function of cultured leukocytes such as NK cells and Tregs. It has also been used therapeutically in the treatment of numerous diseases, including cancer. The clinical benefit of IL-2 therapy comes from the expansion of T cell subsets that can target cancer cells in diseases such as renal cell carcinoma. IL-2 is also used in the production and differentiation of chimeric antigen receptor T cells for ground-breaking personalised CAR T cancer therapy.

Due to its importance both clinically and in research, many companies have produced and sold active recombinant human IL-2 protein. Figure 1 demonstrates that Proteintech's HumanKine® human cell expressed recombinant IL-2 is up to 40x more active than leading competitor IL-2 when benchmarked side-by-side in the competitor's optimized assay protocol.

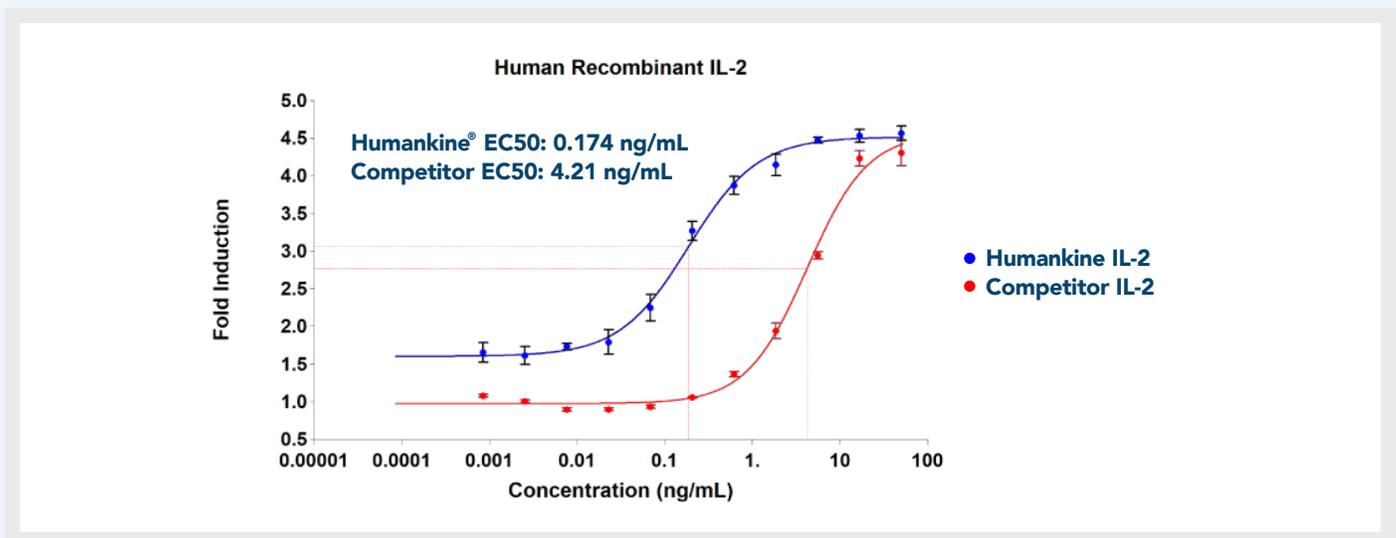


Figure 1. CTLL-2 cells (mouse cytotoxic T cell) were seeded in a 96 well plate at a density of 10,000 cells per well. Cells were starved for 5 hours prior to addition of IL-2. IL-2 was added at a starting concentration of 50 ng/mL and then diluted three-fold. Cells were incubated with IL-2 for 48 hours in a water-jacketed incubator set at 37C. After incubation, PrestoBlue viability reagent was added to the cells and the signal was allowed to develop for at least two hours prior to determination of EC50.

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Proteintech's Humankine® recombinant IL-2 shows an enhanced ability to induce proliferation of $\gamma\delta$ T cells when compared to a leading competitor product.

Humankine® IL-2 treatment results in greater levels of $\gamma\delta$ T cell expansion and proliferation

Cell Expansion

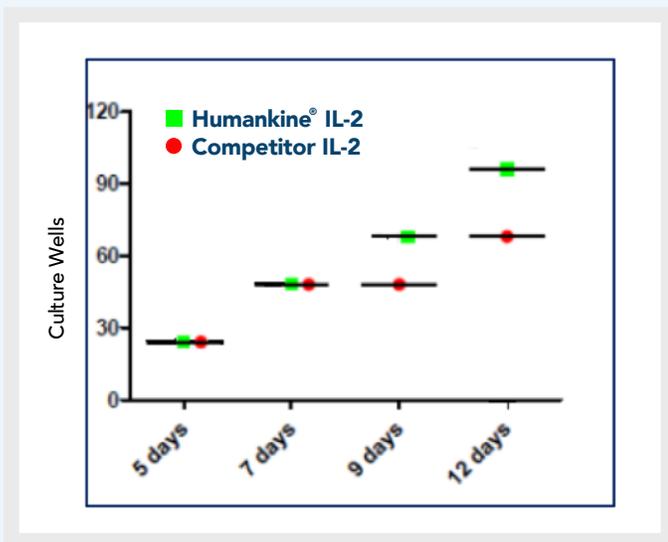


Fig. 2: Cultures were stimulated with 1 μ M zoledronic acid and 10 ng/mL of either competitor IL-2 (red) or Humankine® IL-2 (green). Cells were grown for 12 days and expanded into additional wells when necessary. The number of wells with growing cells was recorded on days 5, 7, 9, and 12. Cells cultured with Humankine IL-2 had expanded into a greater number of wells than those cultured with competitor product

Cell Proliferation

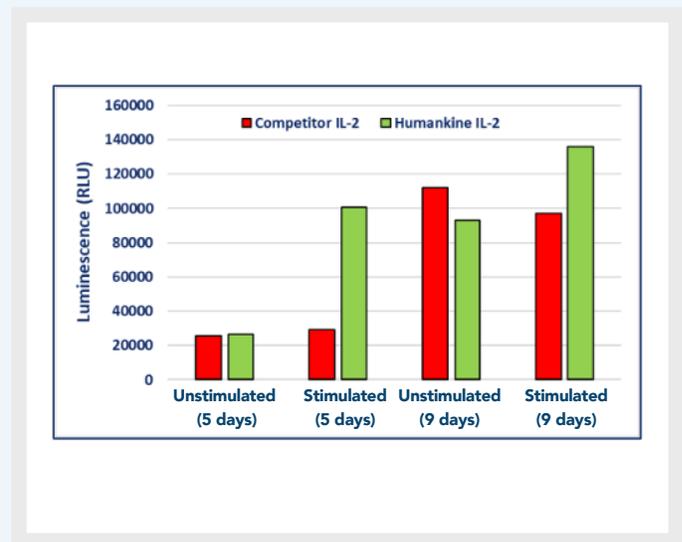


Fig. 3: Cultures were treated with either competitor IL-2 (red) or Humankine® IL-2 (green), and then left unstimulated (control) or stimulated with 1 μ M zoledronic acid. ATPlite assay was conducted on the cultures at 5 and 9 days post treatment to measure cell proliferation. Increased cell proliferation was seen in the stimulated cultures treated with Humankine® product

Source: Dr. Leonardo Castrillo and Dr. Alessandro Poggi, IRCCS Ospedale Policlinico San Martino, unit of Molecular Oncology and Angiogenesis, Genoa, Italy

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