

32-190051: IL-2 Superkine (Fc) [IL-2 (human):Fc (human) (Recombinant)]

Application :	Functional Assay
Reactivity :	Human
Alternative Name :	IL-2 Superkine (human):Fc (human) (rec.); Interleukin-2; T Cell Growth Factor; TCGF; Aldesleukin; Super-2

Description

Source :HEK 293 cells

Specific Binds to human and mouse IL-2R. Interleukin-2 (IL-2) is a 133 amino acid glycoprotein with one intramolecular disulfide bond and variable glycosylation. It is secreted by activated T cells and induces proliferation and maturation of activated T cells, natural killer cells and lymphokine activated killer cells. IL-2 also stimulates proliferation of antibody-producing B cells, activates neutrophils and induces mononuclear cells to secrete IFN-gamma and TNF-alpha and -beta. Moreover, studies have shown that IL-2 is required for activation-induced apoptosis, an important homeostatic mechanism in the immune system, which is involved in the maintenance of peripheral tolerance to self-antigens.

IL-2 promotes T cell proliferation and particularly naive T cells. IL-2 signaling on activated T cells is effected through a quaternary high-affinity receptor complex consisting of IL-2, IL-2Ralpha (CD25), IL-2Rbeta and IL-2Rgamma. Naive T cells are relatively insensitive to IL-2 as they only express small amounts of IL-2Rbeta and IL-2Rgamma. They only acquire sensitivity after CD25 expression, which captures the cytokine and presents it to the IL-2Rbeta and IL-2Rgamma receptors. IL-2 Superkine (Fc) is an artificial variant of IL-2 containing mutations at positions L80F / R81D / L85V / I 86V / I92F. These mutations are located in the molecule's core that acts to stabilize the structure and to give it a receptor-binding conformation mimicking native IL-2 bound to CD25. These mutations effectively eliminate the functional requirement of IL-2 for CD25 expression and elicit proliferation of T cells. Compared to IL-2, the IL-2 superkine induces superior expansion of cytotoxic T cells, leading to improved antitumour responses in vivo, and elicits proportionally less toxicity by lowering the expansion of Tregulatory cells and reducing pulmonary oedema.

Product Info

Amount :	10 µg
Purification :	>=95% (SDS-PAGE)
Content :	Reconstitute with 100 µl sterile water. 0.1mg/ml after reconstitution. Lyophilized. Contains PBS.
Storage condition :	Short Term Storage +4°C ; Long Term Storage -20°C ; After reconstitution, prepare aliquots and store at -20°C. Avoid freeze/thaw cycles. PBS containing at least 0.1% BSA should be used for further dilutions. Stable for at least 6 months after receipt when stored at -20°C. Working aliquots are stable for up to 3 months when stored at -20°C.
Amino Acid :	The extracellular domain of human IL-2 (aa 21-153) (mutant H9 containing the mutations L80F / R81D / L85V / I 86V / I92F) is fused at the C-terminus to the Fc portion of human IgG2.

Application Note

MW :42kDa;

Biological Activity Triggers T cell proliferation at concentration <10ng/ml in the presence of 250ng/mL each of anti-CD3 (ANC-144-020) and anti-CD28 (ANC-177-020) antibodies.

Endotoxin Content <0.01EU/µg protein (LAL test; Lonza).

Triggers far greater antitumor responses than native IL-2 in vivo but with lower toxicity.

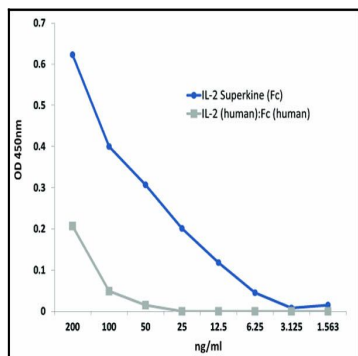


Figure 1: Binding of IL-2 Superkine (Fc) to IL-2R beta (human) is increased >10 fold compared to IL-2 (human):Fc (human) . Methods: IL-2R beta (human) was coated on an ELISA plate at 1µg/ml. After blocking and washing steps, indicated concentrations of IL-2 Superkine (Fc) or IL-2 (human):Fc (human) were added. Following incubation for 1 h at RT, the binding was detected using an anti-human Fc antibody (HRP).