

IL-6R alpha Protein, Human (HEK293, His-Avi)

Cat. No.:	HY-P78472
Synonyms:	IL-6R subunit alpha; IL-6R-alpha; IL-6RA; IL-6R 1; IL6R; CD126; IL6RQ; gp80
Species:	Human
Source:	HEK293
Accession:	P08887 (L20-P365)
Gene ID:	3570
Molecular Weight:	65-78 kDa

PROPERTIES

Biological Activity	Immobilized Human IL-6, No Tag at 2µg/ml (100µl/well) on the plate. Dose response curve for Human IL-6 R alpha, His Tag with the EC ₅₀ of 0.25µg/ml determined by ELISA.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

IL-6 acts as both inflammatory factor and anti-inflammatory factor, fuels cancer progression through activating a series of downstream signalling cascade including gp130 (dimers), JAK/STAT, MAPK, and Akt^{[1][2]}.

IL-6R alpha (IL-6R α) as a part of the receptor for interleukin 6, is a type I transmembrane glycoprotein, which forms a complex with the type I transmembrane signal transducer Glycoprotein 130 (CD130) and regulates the biological activity of IL-6 with a low affinity^[3].

The sequence of amino acids in IL-6R alpha proteins of human is very different from mouse (54.07%) and rat (54.68%).

IL-6R alpha has 2 isoform including mL6R (the longer one) or sIL6R (the shorter one):

The mL6R is membrane-bound interleukin-6 receptor, has the potential to drive naive CD4⁺ T cells to the Th17 lineage, through 'cluster signaling' by dendritic cells^[4].

The sIL-6R is soluble interleukin-6 receptor subunit, cleaved from IL-6R alpha (IL-6R α) in activated CD4⁺ T cells by proteolysis, and serves as IL-6 agonist. sIL-6R binds membrane-bound IL6R and subunit IL6ST to activate regenerative and anti-inflammatory signal via IL-6 trans signaling and promotes pro-inflammatory properties of IL-6. The hydrolysis of IL-6R

alpha is also called ectodomain shedding^[1].

IL-6R alpha involves in regulating cell growth and differentiation, and plays an important role in regulation of immune response, acute-phase reactions and hematopoiesis^[5].

However, IL-6R alpha shows tissue expression specificity in liver and some cells of the immune system, thus results a limitation of IL6 signaling^[6].

It's worth noting that IL-6R alpha dysregulation is implicated in the pathogenesis of many diseases, such as multiple myeloma, autoimmune diseases, and prostate cancer^{[7][8]}.

REFERENCES

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