

IL-10R alpha Protein, Human (HEK293, His-Avi)

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| Cat. No.: | HY-P78464 |
| Synonyms: | IL-10RA; IL10RA; IL10R; IL-10R1; IL-10R subunit 1; CDw210a; HIL-10R; IBD28; IL-10 R alpha |
| Species: | Human |
| Source: | HEK293 |
| Accession: | Q13651 (H22-N235) |
| Gene ID: | 3587 |
| Molecular Weight: | 40-48 kDa |

PROPERTIES

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| Biological Activity | Immobilized Human IL-10 at 2 µg/mL (100 µL/Well) on the plate. Dose response curve for Human IL-10 R alpha His with the EC ₅₀ of 21.7-53.9 ng/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-10R alpha is a ligand-binding subunit of the type II cytokine receptor consisting of 2 alpha and 2 beta subunits and is expressed primarily in hematopoietic cells such as B cells, T cells, NK cells, monocytes and macrophages, but not in non-hematopoietic cells such as fibroblasts or endothelial cells^[1].

IL-10R alpha binds to the ligand and leads to a conformational change in the beta subunit, which results in the beta subunit also binding IL-10, forming a heterotetramer that leads to activation of the signalling complex of JAK1 and TYK2 kinases. In this case, JAK1 binds to the alpha subunit and TYK2 binds to the beta subunit, phosphorylating specific tyrosine residues in the intracellular structural domain of IL10R alpha. This further leads to phosphorylation and activation of the transcription factor STAT3, which dimerises STAT3 monomers into the nucleus and induces transcriptional expression of the target gene^[1].

IL-10R alpha is involved in suppressing inflammatory responses and Th 1 cell-mediated immune responses, and also regulates neutrophil functional responses. In addition, IL10R alpha-mediated activation of STAT3 also inhibits starvation-induced autophagy^[2].

REFERENCES

- [1]. Dror S Shouval, et al. Interleukin 10 receptor signaling: master regulator of intestinal mucosal homeostasis in mice and humans. *Adv Immunol.* 2014;122:177-210.
- [2]. J Shi, et al. IL10 inhibits starvation-induced autophagy in hypertrophic scar fibroblasts via cross talk between the IL10-IL10R-STAT3 and IL10-AKT-mTOR pathways. *Cell Death Dis.* 2016 Mar 10;7(3):e2133.
- [3]. L Crepaldi, et al. Up-regulation of IL-10R1 expression is required to render human neutrophils fully responsive to IL-10. *J Immunol.* 2001 Aug 15;167(4):2312-22.
- [4]. Nianci Chen, et al. Targeting of IL-10R on acute myeloid leukemia blasts with chimeric antigen receptor-expressing T cells. *Blood Cancer J.* 2021 Aug 14;11(8):144.
- [5]. Douglas J Kominsky, et al. IFN- γ -mediated induction of an apical IL-10 receptor on polarized intestinal epithelia. *J Immunol.* 2014 Feb 1;192(3):1267-76.
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Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA