

## IL-2R alpha/CD25 Protein, Human (HEK293, N-His)

Cat. No.:	HY-P7215
Synonyms:	rHuIL-2R $\alpha$ , His; TAC-antigen; CD25
Species:	Human
Source:	HEK293
Accession:	P01589 (E22-C213)
Gene ID:	3559
Molecular Weight:	Approximately 42 kDa

### PROPERTIES

AA Sequence	<pre> LCDDDPPEIP    HATFKAMAYK    EGTMLNCECK    RGFRRIKSGS LYMLCTGNS    HSSWDNQCC    TSSATRNTTK    QVTPQPEEQK ERKTTTEMQSP    MQPVDQASLP    GHCREPPWE    NEATERIYHF VVGQMVYYQC    VQGYRALHRG    PAESVCKMTH    GKTRWTQPQL ICTGEMETSQ    FPGEEKPQAS    PEGRPESETS    C           </pre>
Biological Activity	The ED <sub>50</sub> is <1.5 $\mu$ g/mL as measured by murine CTLL-2 cells.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against PBS.
Endotoxin Level	<0.2 EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	<p>IL-2R alpha (CD25) is a type I membrane protein. IL-2R alpha is expressed in peripheral activated T and B cells, triple-negative thymocytes, and bone marrow pre-B cells. In high tumor regulatory T (Treg) cells, IL-2R alpha is highly expressed and is a potential target for Treg deletion. The expression of IL-2R alpha is undetectable on resting T cells<sup>[1][2][3]</sup>.</p> <p>The sequence of amino acids in IL-2R alpha from different species is very different (less than 85% similarity among human, rat and mouse).</p>
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IL-2R alpha is an essential component of high-affinity IL-2 receptors and has no signal-transducing activity per se. IL-2R alpha functions through enhancing binding of IL-2 to its receptor complex and acts as a positive feedback regulator. IL-2 is a principal growth factor for T lymphocytes and plays an important role in T cell immune response. IL-2R alpha transcription is regulated by three positive regulatory regions (PRRs): PRR1, PRR2 and PRR3. PRR3 is an IL-2 response element<sup>[1][2]</sup>. IL-2R alpha regulates T cell growth, augments lymphocyte activation and proliferation. IL-2R alpha is involved in preventing type 1 diabetes and cancers<sup>[1][2][4]</sup>.

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## REFERENCES

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- [1]. H.Asao. Interleukin-2. Reference Module in Biomedical Sciences. 2014. ISBN 9780128012383.
- [2]. Kim HP, et al. The basis for IL-2-induced IL-2 receptor alpha chain gene regulation: importance of two widely separated IL-2 response elements. *Immunity*. 2001 Jul;15(1):159-72.
- [3]. Bell CJ, et al. Sustained in vivo signaling by long-lived IL-2 induces prolonged increases of regulatory T cells. *J Autoimmun*. 2015 Jan;56:66-80.
- [4]. Chistiakov DA, et al. The crucial role of IL-2/IL-2RA-mediated immune regulation in the pathogenesis of type 1 diabetes, an evidence coming from genetic and animal model studies. *Immunol Lett*. 2008 Jun 15;118(1):1-5.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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