

## IL-1R2 Protein, Human (HEK293, Fc)

Cat. No.:	HY-P77701
Synonyms:	IL-1R-2; IL-1RT-2; IL-1RT2; CDw121b; IL-1R-beta; CD121b; IL1RB; IL1R2; IL-1 RII; MGC47725
Species:	Human
Source:	HEK293
Accession:	P27930 (F14-E343)
Gene ID:	7850
Molecular Weight:	70-80 kDa

### PROPERTIES

Biological Activity	Immobilized Human IL-1 Beta at 5 µg/mL (100µL/Well) on the plate. Dose response curve for Human IL-1 RII with the EC <sub>50</sub> of 0.2-0.3 µg/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 <sub>2</sub> 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-1R2 is the non-signaling type 2 interleukin-1 receptor and is natively found on neutrophils, B-cells, monocytes and macrophages. IL-1R2 is also expressed in breast and colon cancer cells. IL-1R2 is rapidly upregulated in human regulatory T cells (Tregs). The human IL-1R2 can be cleaved into two forms: membrane form (14-398 a.a) and soluble form (14-? a.a). The sequence of amino acids in IL-1R2 from human shows low similarity (about 60%) with both mouse and rat IL-1R2. IL-1R2 contains truncated cytoplasmic domain and lacks Toll-IL-1 receptor (TIR) region, making it incapable of transmembrane signaling. IL-1R2 serves as an endogenous inhibitor of IL-1 signaling. Functional IL-1 signaling requires IL-1R1 and IL-1-dependent recruitment of IL-1RAP. IL-1R2 serves as a decoy receptor and can compete with IL-1R1 for IL-1. IL-1R2 can also form a complex with IL-1RAP once it binds IL-1, preventing IL-1RAP from heterodimerizing with IL-1R1. Through these 2 ways, IL-1R2 blocks IL-1 signaling. Additionally, soluble IL-1R2 recruits soluble IL-1RAP with high affinity without impacting affinity for IL-1RA. IL-1R2 inhibits IL-1 signaling and has been implicated in various IL-1-mediated inflammatory diseases like arthritis, diabetes, gout and so on<sup>[1][2][3]</sup>.

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## REFERENCES

- [1]. Peters VA, et al. IL-1 receptor 2 (IL-1R2) and its role in immunoregulation. *Brain Behav Immun*. 2013 Aug;32:1-8.
- [2]. Molgora M, et al. Tuning inflammation and immunity by the negative regulators IL-1R2 and IL-1R8. *Immunol Rev*. 2018 Jan;281(1):233-247.
- [3]. Lin J, et al. Cardiomyocyte IL-1R2 protects heart from ischemia/reperfusion injury by attenuating IL-17RA-mediated cardiomyocyte apoptosis. *Cell Death Dis*. 2022 Jan 27;13(1):90.
- [4]. Khoufache K, et al. Soluble human IL-1 receptor type 2 inhibits ectopic endometrial tissue implantation and growth: identification of a novel potential target for endometriosis treatment. *Am J Pathol*. 2012 Oct;181(4):1197-205.
- [5]. Uchikawa S, et al. ADAM17 regulates IL-1 signaling by selectively releasing IL-1 receptor type 2 from the cell surface. *Cytokine*. 2015 Feb;71(2):238-45.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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