

## IL-1R2 Protein, Mouse (HEK293, His)

Cat. No.:	HY-P72568
Synonyms:	Interleukin-1 receptor type 2; IL-1R-2; CDw121b; IL-1R-beta; CD121b; mL-1R2; sIL-1R2
Species:	Mouse
Source:	HEK293
Accession:	P27931 (F14-E355)
Gene ID:	16178
Molecular Weight:	45-60 kDa

### PROPERTIES

AA Sequence	<pre> FTTPTVVHTG   KVSESPITSE   KPTVHGDNCQ   FRGREFKSEL RLEGEPVVLRL   CPLAPHSDIS   SSSHSFLTWS   KLDSSQLIPR DEPRMWVKGN   ILWILPAVQQ   DSGTYICTFR   NASHCEQMSV ELKVFKNTEA   SLPHVSYLQI   SALSTTGLLV   CPDLKEFISS NADGKIQWYK   GAILLDKGNK   EFLSAGDPTR   LLISNTSMDD AGYYRCVMTF   TYNGQEYNIT   RNIELRVKGT   TTEPIPVIIIS PLETIPASLG   SRLIVPCKVF   LGTGTSSNTI   VWWLANSTFI SAAYPRGRVT   EGLHHQYSEN   DENYVEVSLI   FDPVTREDLH TDFKCVASNP   RSSQSLHTTV   KE           </pre>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
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. 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	IL-1R2 is the non-signaling type 2 interleukin-1 receptor and is expressed in DC, CD4+ T cells, T regulatory cells, monocytes, neutrophils and different macrophagic cells in mouse. The mouse IL-1R2 can be cleaved into two forms: membrane form (14-410 a.a) and soluble form (14-? a.a).
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The sequence of amino acids in IL-1R2 from mouse shows low similarity (about 60%) with human IL-1R2, but has been only slightly altered with rat IL-1R2 (90 % similarity).

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

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- [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]. Simeoni E, et al. Gene transfer of a soluble IL-1 type 2 receptor-Ig fusion protein improves cardiac allograft survival in rats. *Eur J Cardiothorac Surg*. 2007 Feb;31(2):222-8.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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