

Human IL-1R2 Sandwich ELISA Kit Datasheet

For the quantitative detection of human IL-1R2 in serum and plasma.

General Information

Catalogue Number	KE00201
Product Name	Human IL-1R2 Sandwich ELISA Kit
Species cross-reactivity	Human
Range (calibration Range)	31.25-2000 pg/mL
Tested applications	Quantification ELISA

Database Links

Entrez Gene	7850
SwissProt	P27930

Kit Components & Storage

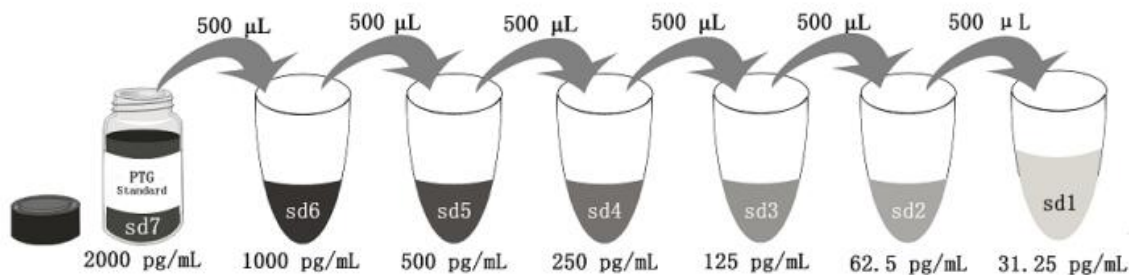
Microplate - antibody coated 96 - well microplate (8 well × 12 strips)	1 plate	Unopened Kit: Store at 2-8°C for 6 months or -20°C for 12 months. Opened Kit: All reagents stored at 2-8°C for 7 days. Please use a new standard for each assay.
Protein standard - 4000 pg/bottle; lyophilized*	2 bottles	
Detection antibody, biotinylated (100X) - 120 µL/vial	1 vial	
Streptavidin-horseradish peroxidase (HRP) (100X) - 120 µL/vial	1 vial	
Sample Diluent PT 3-ef - 30 mL/bottle.	1 bottle	
Detection Diluent - 30 mL/bottle	1 bottle	
Wash Buffer Concentrate (20X) - 30 mL/bottle	1 bottle	
Tetramethylbenzidine Substrate (TMB) - 12 mL/bottle	1 bottle	
Stop Solution - 12 mL/bottle	1 bottle	
Plate Cover Seals	3 pieces	

NB: Do not use the kit after the expiration date.

Sample Diluent PT 3-ef is for protein standard and samples.

Detection Diluent is for Detection antibody and streptavidin-HRP.

*Add 2mL Sample Diluent PT 3-ef in protein standard. This reconstitution gives a stock solution of 2000 pg/mL.



Add # µL of Standard diluted in the previous step	—	500 µL	500 µL	500 µL	500 µL	500 µL	500 µL
# µL of Sample Diluent PT 3-ef	2000 µL	500 µL	500 µL	500 µL	500 µL	500 µL	500 µL
	"sd7"	"sd6"	"sd5"	"sd4"	"sd3"	"sd2"	"sd1"

Product Description

KE00201 is a solid phase sandwich Enzyme Linked-Immuno-Sorbent Assay (Sandwich ELISA). The IL-1R2 ELISA kit is to be used to detect and quantify protein levels of endogenous IL-1R2. The assay recognizes human IL-1R2. An antibody specific for IL-1R2 has been pre-coated onto the microwells. The IL-1R2 protein in samples is captured by the coated antibody after incubation.

Following extensive washing, another antibody of biotinylated specific for human IL-1R2 is added to detect the captured human IL-1R2 protein. For signal development, Streptavidin-HRP is added, followed by Tetramethyl-benzidine (TMB) reagent. Solution containing sulfuric acid is used to stop color development and the color intensity which is proportional to the quantity of bound protein is measurable at 450 nm with the correction wavelength set at 630 nm.

Background

Interleukin-1 receptor type 2 (IL-1R2, also known as CD121b) is a cytokine receptor that belongs to the interleukin 1 receptor family. IL-1R2 binds interleukin alpha (IL-1A), interleukin beta (IL-1B), and interleukin 1 receptor, type I (IL-1R1/IL-1RA), and acts as a decoy receptor that inhibits the activity of its ligands. It exists in both a membrane bound and soluble form. Soluble molecules are found in cell culture supernatant and in biological fluids under several physiopathological conditions.

Sample Preparation

Different samples may require proper dilution to fall within the range of the assay. The serum or plasma is better to be diluted 1:4 or 1:8 before assay.

Safety Notes

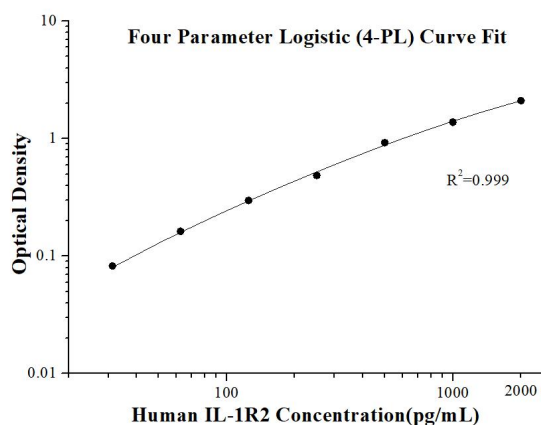
This product is sold for lab research and development use ONLY and not for use in humans or animals. Avoid any skin and eye contact with Stop Solution and TMB. In case of contact, wash thoroughly with water.

Assay Procedure Summary

Step	Reagent	Volume	Incubation	Wash	Notes
1	Standard and Samples	100 µL	120 min	4 times	Cover Wells incubate at 37°C
2	Diluent Antibody Solution	100 µL	60 min	4 times	Cover Wells incubate at 37°C
3	Diluent HRP Solution	100 µL	40 min	4 times	Cover Wells incubate at 37°C
4	TMB Substrate	100 µL	15-20 min	Do not wash	Incubate in the dark at 37°C
5	Stop Solution	100 µL	0 min	Do not wash	-
6	Read plate at 450 nm and 630 nm immediately after adding Stop solution. DO NOT exceed 5 minutes.				

Example data

These standard curves are provided for demonstration only. A standard curve should be generated for each set of samples assayed.



(pg/mL)	O.D	Average	Corrected
0	0.108 0.107	0.108	-
31.25	0.186 0.194	0.190	0.083
62.5	0.273 0.267	0.270	0.163
125	0.412 0.399	0.406	0.298
250	0.605 0.582	0.594	0.486
500	1.044 1.091	1.032	0.924
1000	1.522 1.457	1.490	1.382
2000	2.214 2.206	2.210	2.103

Precision

Intra-assay Precision (Precision within an assay) Three samples of known concentration were tested 20 times on one plate to assess intra-assay precision.

Inter-assay Precision (Precision between assays) Three samples of known concentration were tested in 24 separate assays to assess inter-assay precision.

Intra-assay Precision					Inter-assay Precision				
Sample	n	Mean (pg/mL)	SD	CV%	Sample	n	Mean (pg/mL)	SD	CV%
1	20	956.7	57.0	6.0	1	24	840.5	68.4	8.1
2	20	246.6	17.4	7.1	2	24	195.0	18.0	9.2
3	20	56.9	5.5	9.6	3	24	45.1	4.5	10.1

Recovery

The recovery of IL-1R2 spiked to three different levels in four samples throughout the range of the assay in various matrices was evaluated.

Sample Type		Average% of Expected	Range (%)
Human serum	1:8	93	76-128
	1:16	98	71-129

Sample Values

Serum and plasma samples from healthy volunteers were evaluated for IL-1R2 in this assay. No medical histories were available for the donors used in this study.

Sample Type	Detectable (pg/mL)	Range (pg/mL)
Human serum (n=16)	2,216.0	1,482.1-3,561.1

Sensitivity

The minimum detectable dose of human IL-1R2 is 8.0 pg/mL. This was determined by adding two standard deviations to the concentration corresponding to the mean O.D. of 20 zero standard replicates.

Linearity

To assess the linearity of the assay, samples were diluted with the appropriate Sample Diluent to produce samples with values within the dynamic range of the assay.

		Human serum
1:2	Average% of Expected	100
	Range (%)	-
1:4	Average% of Expected	114
	Range (%)	103-125
1:8	Average% of Expected	99
	Range (%)	90-109
1:16	Average% of Expected	90
	Range (%)	76-113

References

1. McMahan C J, Slack J L, Mosley B, et al. A novel IL - 1 receptor, cloned from B cells by mammalian expression, is expressed in many cell types[J]. The EMBO journal, 1991, 10(10): 2821-2832.
2. Colotta F, Re F, Muzio M, et al. Interleukin-1 type II receptor: a decoy target for IL-1 that is regulated by IL-4[J]. Science, 1993, 261(5120): 472-475.
3. Giri J G, Wells J, Dower S K, et al. Elevated levels of shed type II IL-1 receptor in sepsis. Potential role for type II receptor in regulation of IL-1 responses[J]. The Journal of Immunology, 1994, 153(12): 5802-5809.
4. Neumann D, Kollwe C, Martin M U, et al. The membrane form of the type II IL-1 receptor accounts for inhibitory function[J]. The Journal of Immunology, 2000, 165(6): 3350-3357.