






# Human IL-2 ELISA

**REF:** KB1064

Ver 5.1

**RUO**

ELISA for Accurate Quantitation from Cell Culture Supernatant, Serum, Plasma, or Other Bodily Fluids

<b>RUO</b>	<b>For Research Use Only</b>	<b>REF</b>	<b>Catalog Number</b>
	<b>Store At</b>	<b>LOT</b>	<b>Batch Code</b>
	<b>Manufactured By</b>		<b>Biological Risk</b>
	<b>Expiry Date</b>		<b>Consult Operating Instructions</b>

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**KRISHGEN BioSystems** Unit Nos#318/319, Shah & Nahar, Off Dr E Moses Road, Worli, Mumbai 400 018.  
Tel: (022) 49198700 Email: sales@krishgen.com

**Introduction:**

IL-2 is a potent lymphoid cell growth factor which exerts its biological activity primarily on T-cells promoting proliferation and maturation. Additionally, IL-2 has been found to stimulate growth and differentiation of B cells, NK cells, LAK cells, monocytes, and oligodendocytes. Recombinant human IL-2 is a 15.5 kDa protein containing 134 amino acid residues including one intrachain disulfide bond.

**Intended Use:**

The human IL-2 ELISA is an enzyme-linked immunosorbent assay for accurate and precise quantitative detection of human IL-2 from samples including serum, plasma, and supernatants from cell cultures. The human IL-2 ELISA is for research use only. Not for diagnostic or therapeutic procedures.

**Materials Provided:**

1. Microtiter Coated Plate (12 X 8 wells) – 1 no
2. Recombinant Human IL-2 Standard – 2 vials
3. Human IL-2 Biotin Conjugated Detection Antibody – 1 vial
4. Concentrated Streptavidin Horseradish Peroxidase – 1 vial
5. Wash Buffer (20X) – 25ml
6. Assay Diluent – 50ml
7. TMB Substrate – 12ml
8. Stop Solution – 12ml
9. Instruction Manual

**Materials to be provided by the End-User:**

1. Microplate Reader able to measure absorbance at 450 nm.
2. Adjustable pipettes to measure volumes ranging from 50µl to 1000µl.
3. Deionized (DI) water.
4. Wash bottle or automated microplate washer.
5. Semi-Log graph paper or software for data analysis.
6. Tubes to prepare standard/sample dilutions.
7. Timer.
8. Absorbent paper.

**Storage Information:**

1. Store main kit components at 2-8° C.
2. Store recombinant Standard at -20°C. Upon thawing, aliquot recombinant protein into polypropylene vials and store at -20°C as per assay requirements.
3. Before using, bring all components to room temperature (18-25°C). Upon assay completion return all components to appropriate storage conditions.

**Health Hazard Warnings:**

1. Reagents that contain preservatives may be harmful if ingested, inhaled or absorbed through the skin. Refer to the MSDS online for details.
2. To reduce the likelihood of blood-borne transmission of infectious agents, handle all serum and/or plasma in accordance with NCCLS regulations.

**Specimen Collection and Handling:**

Specimens should be clear and non-hemolyzed. Samples should be run at a number of dilutions to ensure accurate quantitation.

*Cell Culture Supernatant:* If necessary, centrifuge to remove debris prior to analysis. Samples can be stored at temperature < -20° C. Avoid repeated freeze/thaw cycles.

*Serum:* Use a serum separator tube and allow clotting for 30 minutes, then centrifuge for 10 minutes at 1000xg. Remove serum layer and assay immediately or store serum samples at temperature < -20° C. Avoid repeated freeze/thaw cycles.

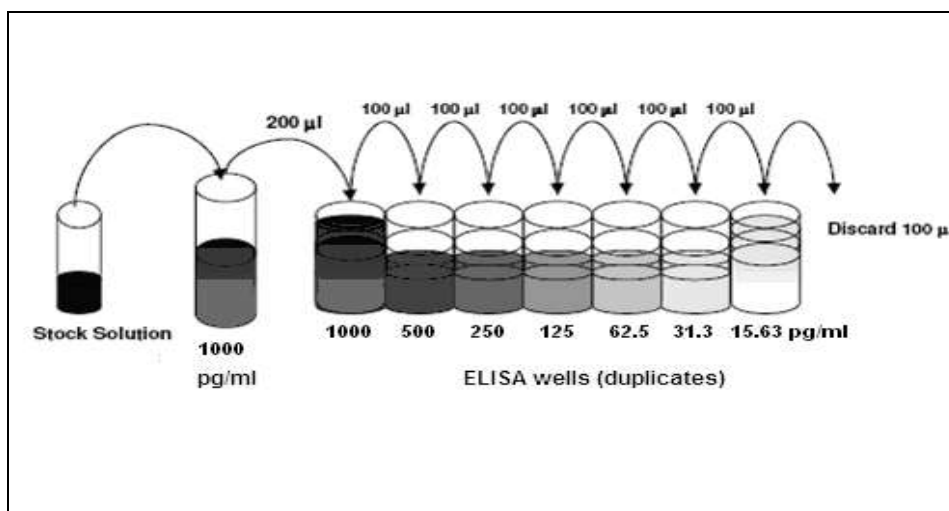
*Plasma:* Collect blood sample in a citrate, heparin or EDTA containing tube. Centrifuge for 10 minutes at 1000xg within 30 minutes of collection. Assay immediately or store plasma samples at temperature < -20° C. Avoid repeated freeze/thaw cycles.

**Reagent Preparation:**

Please refer to lot specific instructions for preparation of the reagents.

**Assay Procedure: ALL STEPS TO BE PERFORMED AT 37°C.**

1. Bring all reagents to room temperature prior to use. It is strongly recommended that all standards and samples be run in duplicate or triplicate. A standard curve is required for each assay.
2. Add 50µl of diluted **Detection Antibody** solution to each well followed by addition of 100µl/well of **Standards** and **Samples** to the plate. Perform two-fold serial dilutions of the 1000pg/ml top standard, either within the plate or in separate tubes. Thus, the Human IL-2 standard concentrations are 1000pg/ml, 500pg/ml, 250pg/ml, 125pg/ml, 62.5pg/ml, 31.3pg/ml, and 15.63pg/ml. **Assay Diluent** serves as the zero standard (0pg/ml). Seal plate and incubate at 37°C for 2 hours.



3. Aspirate and wash plate 4 times with **Wash Buffer (1X)** and blot residual buffer by firmly tapping plate upside down on absorbent paper. Wipe off any liquid from the bottom outside of the microtiter wells as any residue can interfere in the reading step. All the washes should be performed similarly.

4. Add 100µl of diluted **Streptavidin-HRP** solution to each well, seal plate and incubate at 37°C for 30 minutes.
5. Wash plate 4 times with **Wash Buffer (1X)** as in step 3. For this final wash, soak wells in Wash Buffer for 30 seconds to 1 minute for each wash. This will help minimize background.
6. Add 100µl of **TMB Substrate** solution and incubate in the dark for 30 minutes at 37°C. Monitor the color development at every 5 minutes. Positive wells should turn bluish in color. It is not necessary to seal the plate during this step.
7. Stop reaction by adding 100µl of **Stop Solution** to each well. Positive wells should turn from blue to yellow.
8. Read absorbance at 450 nm within 30 minutes of stopping reaction.

**Calculation of Results:**

Determine the mean absorbance for each set of duplicate or triplicate standards and samples. Subtract the mean absorbance of the zero standards (background) from each well. Plot the standard curve on Semi-Log graph paper, with cytokine concentration on the x-axis and absorbance on the y-axis. Draw the best fit straight line through the standard points. To determine the unknown cytokine concentrations, find the unknowns mean absorbance value on the y-axis and draw a horizontal line to the standard curve. At the point of intersection, draw a vertical line to the x-axis and read the cytokine concentration. If samples were diluted, multiply by the appropriate dilution factor. Computer based curve-fitting software may be preferred.

**Quality Control:**

It is recommended that for each laboratory assay appropriate quality control samples in each run to be used to ensure that all reagents and procedures are correct.

**Safety Precautions:**

- **This kit is for in vitro use only.** Follow the working instructions carefully.
- The expiration dates stated on the kit are to be observed. The same relates to the stability stated for reagents
- Do not use or mix reagents from different lots.
- Do not use reagents from other manufacturers.
- Avoid time shift during pipetting of reagents.
- All reagents should be kept in the original shipping container.
- Some of the reagents contain small amount of sodium azide (< 0.1 % w/w) as preservative. They must not be swallowed or allowed to come into contact with skin or mucosa.
- Source materials maybe derived from human body fluids or organs used in the preparation of this kit were tested and found negative for HBsAg and HIV as well as for HCV antibodies. However, no known test guarantees the absence of such viral agents. Therefore, handle all components and all patient samples as if potentially hazardous.
- Since the kit contains potentially hazardous materials, the following precautions should be observed
  - Do not smoke, eat or drink while handling kit material
  - Always use protective gloves
  - Never pipette material by mouth
  - Wipe up spills promptly, washing the affected surface thoroughly with a decontaminant.
- In any case GLP should be applied with all general and individual regulations to the use of this kit.



**LIMITED WARRANTY**

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