Pioneer Research Anahita Company
No.157
Danesh street
Technology Park Pardis
Tehran/ Iran

DATA SHEET
Versions: 01
Revision date: 25/11/2023

1. Identification

Product name: ELISA kits for Rat IL-1β

Reactions: 96,48 rxns

Cat. No.: PRA-RIL-1β -96, PRA- RIL-1β-48

2. Description

Interleukin-1β (IL-1β), a critical inflammatory cytokine, is predominantly produced by innate immune cells. Renowned for its diverse inflammatory properties, IL-1β plays a pivotal role in combating bacterial, viral, and fungal infections. Conversely, it also assumes a significant role in the development of diseases mediated by cellular immunity.IL-1β is a potent initiator and amplifier of inflammatory responses, contributing to the immune system's defense against various infections. Its involvement in diseases mediated by cellular immunity establishes IL-1β as a central player in pathological processes.IL-1β serves as a crucial indicator of inflammasome activity. Initially existing as Pro-IL-1 within cells, it undergoes activation and secretion upon cleavage by inflammasomes, reflecting the activation of inflammatory responses. As a widely recognized inflammatory indicator, IL-1β is extensively utilized in laboratory studies. Its application aids in investigating disease conditions and evaluating the inflammatory or anti-inflammatory effects of pharmaceutical agents. The present kit, meticulously designed and produced, utilizes anti-IL-1β rat monoclonal antibodies. It is crucial to note that this kit is specifically intended for measuring IL-1β levels and may not be suitable for similar animal cases.

This comprehensive overview underscores the pivotal role of IL-1β in inflammation, immune response, and disease mediation, making it a cornerstone in experimental research and clinical investigations.

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3. Kit Contents

Component	Cat. no	Quantity
Human anti- RIL1 pre-coated plate	PRA– RIL1P	96 vials
Standards	PRA- RIL1N1-4	200 µl
HRP-Avidin buffer	PRA-HA	5 ml
HRP	PRA-HAA	540 µl
Substrate	PRA-SU	5 ml
Stopping	PRA-ST	7 ml
10X washing buffer	PRA-WB	40 ml
Detection Ab	PRA- RIL1D	5 ml

4. Storage specifications

All components of the ELISA kits can be stored at 4°C temperature.

5. Applications

Detection of both inflammatory and anti-inflammatory factors through ELISA.

6. Assay Procedure

How to Prepare Solutions:
1. Washing Buffer:
- To prepare the washing solution, dilute it with distilled water at a 1:10 ratio.
2. HRP-Avidin:
- Spin the HRP vial using a microfuge device, then add all its contents to the HRP-Avidin buffer vial.
- For quantities less than 48 assays, mix 416 µL of HRP-Avidin, 41 µL of HRP per 8-well row.

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Working with the Kit:

1. Plate Preparation:
   - Remove the plate from its package and let it reach room temperature in a dry environment.
   - Add 50 µL of standards #4 to #1 in the first to fourth wells.
2. Sample Incubation:
   - Add 50 µl of the desired sample to the remaining wells.
   - Incubate for 60 minutes on a 200 RPM shaker at room temperature.
3. Plate Washing:
   - After proper incubation, wash the plates three times using the washing solution (after adding the washing solution, incubate the plates for approximately 1 minute at room temperature and then drain).
4. Conjugated Antibody Addition:
   - Add 50 µl of conjugated antibody (Detection ab) to all wells.
   - Incubate for 60 minutes on a 200 RPM shaker at room temperature.
5. Plate Washing (Again):
   - After proper incubation, wash the plates three times using washing solution.
6. HRP-Avidin Addition:
   - Add 50 µl of HRP-Avidin solution to all wells.
   - Incubate for 30 minutes on a shaker (at least at RPM 200).
7. Plate Washing (Again):
   - After proper incubation, wash the plates five times using washing solution.
8. Substrate Addition:
   - Add 50 µl of substrate to all wells and incubate for 15 minutes. Note that 15 minutes is enough for incubation, but if the amount of color produced is low, the time can be increased to 20 minutes.
9. Stopping Reaction:
   - Add 25 µl of the stopping solution to all the wells.
10. Measurement:
    - Measure the absorbance of the samples in an ELISA reader at a wavelength of 450 nm.

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7. Safety

- The solutions used in the kit have oxidizing and acidic properties.

- Avoid direct contact with skin and eyes.

- In case of contact with the mentioned tissues, wash with plenty of water and go to the nearest medical center.

8. Quality Certifications

- This product is developed, designed, and sold exclusively only for research purposes use.
- The product was not tested for use in diagnostics or for drug development.
- It is not suitable for administration to humans or animals.

10. Other Kits

Other ELISA kits:

Human:
IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10, IL-12, IL-13, IL-18, IL-23, IL-29, IL-17A, TGF-β, VEGF, TNF-α, IFN-γ, CCL2 (MCP-1), CCL3 (MIP-1-alpha), CXCL10 (IP-10), CXCL12 (SDF-1), CCL21

Mouse:
IL-1β, IL-2, IL-4, IL-6, IL-10, IL-13, IL-33, IL-18, TNF-α, TGF-β, CCL3, IFN-γ, Total IgG, Total IgE

Rat:
TNF-α, IL-1β, IL-6, IL-10, IL-17A

NOTE

All products have been manufactured by Karmania Pars Gene Company in the Iran.