Datasheet for ABIN7014027

IL-18 ELISA Kit

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Overview

Quantity:	96 tests
Target:	IL-18 (IL18)
Reactivity:	Human
Method Type:	Sandwich ELISA
Detection Range:	1.563 pg/mL - 100 pg/mL
Minimum Detection Limit:	1.563 pg/mL
Application:	ELISA

Product Details

Purpose:	For quantitative detection of IL-18 in serum, plasma, tissue homogenates and other biological fluids.
Sample Type:	Plasma, Serum, Tissue Homogenate
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Specificity:	This assay has high sensitivity and excellent specificity for detection of IL -18. No significant cross-reactivity or interference between IL-18 and analogues were observed.
Sensitivity:	0.983 pg/mL
Grade:	High Sensitivity
Components:	• Pre-coated, ready to use 96-well strip plate • Plate sealer for 96 wells

Product Details

- Standard
- Sample/Standard Dilution Buffer
- Assay Diluent
- Biotin-labeled Antibody (Concentrated)
- HRP-Streptavidin (HRP-SA)
- Biotin System (BS)
- BS Dilution Buffer
- TMB Substrate
- Stop Solution
- Wash Buffer (25 x concentrate)
- Instruction manual

Target Details

Target:	IL-18 (IL18)
Alternative Name:	Interleukin 18 (IL18 Products)
Background:	Interleukin-18 (IL-18) is a proinflammatory cytokine in the IL-1 family that exerts distinct immune effects depending on the local cytokine environment. It is expressed as a 24 kDa precursor by endothelial and epithelial cells, keratinocytes, gamma δT cells, and phagocytes. The precursor is activated intracellularly by Caspase-1 mediated proteolysis to release the 17 kDa mature cytokine. The precursor can also be released by necrotic cells for extracellular cleavage by multiple proteases. IL -18 activation is induced by infection or tissue damage and contributes to disease pathology in chronic inflammation. IL -18 binds to the widely expressed IL-18 R alpha which recruits IL-18 R beta to form the signaling receptor complex. Its bioactivity is negatively regulated by interactions with IL-18 binding proteins and virally encoded IL-18BP homologs. In the presence of IL-12 or IL-15, IL-18 enhances anti-viral Th1 immune responses by inducing IFN-gamma production and the cytolytic activity of CD8+ T cells and NK cells. In the absence of IL-12 or IL-15, however, IL-18 promotes production of the Th2 cytokines IL-4 and IL-13 by CD4+ T cells and basophils. In the presence of IL-1 beta or IL-23, IL-18 induces the antigenindependent production of IL-17 by gamma δ T cells and CD4+ T cells. IL-18 also promotes myeloid dendritic cell maturation and triggers neutrophil respiratory burst. In cancer, IL-18 exhibits diverse activities including enhancing anti-tumor immunity, inhibiting or promoting angiogenesis, and promoting tumor cell metastasis. Alternative splicing in human ovarian cancer generates an isoform that is resistant to Caspase-1 activation. A cell surface form can be expressed on M-CSF induced macrophages and released in response to bacterial endotoxin.
Pathways:	Cellular Response to Molecule of Bacterial Origin, Activated T Cell Proliferation, Cancer Immune

Target Details

Checkpoints, Inflammasome

Application Details

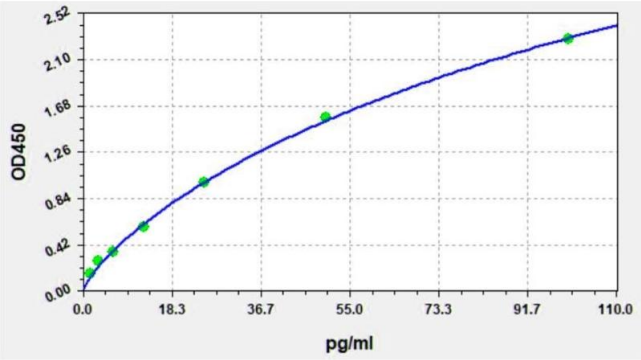
Sample Volume:	50 µL
Plate:	Pre-coated
Protocol:	1. Prepare all reagents, samples and standards, 2. Add 50µL Assay Diluent to each well 3. Add 50µL standard or sample to each well. Incubate 90 minutes at 37 °C, 4. Aspirate and wash 2 times, 5. Add 100µL Biotin-labeled antibody to each well. Incubate 1 hour at 37 °C, 6. Aspirate and wash 2 times, 7. Add 100µL BS Working Solution to each well. Incubate 15 minutes at RT, 8. Aspirate and wash 3 times, 9. Add 100µL HRP-SA to each well. Incubate 30 minutes at 37 °C, 10. Aspirate and wash 3 times, 11. Add 90µL Substrate Solution. Incubate 10-20 minutes at 37 °C, 12. Add 50µL Stop Solution. Read at 450nm immediately.
Reagent Preparation:	Bring all reagents and samples to room temperature for 20 minutes before use. 1. Wash Buffer: Dilute 30 mL Concentrated Wash Buffer to 750 mL Wash Buffer with deionized or distilled water. Put unused solution back at 2-8 °C. Note: If crystals have formed in the concentrate, you can warm it with 40 °C water bath (Heating temperature should not exceed 50 °C) and mix it gently until the crystals have completely been dissolved. The solution should be cooled to room temperature before use. 2. Standards: a) Add 1 mL Sample Dilution Buffer into one Standard tube (labeled as zero tube), keep the tube at room temperature for 10 minutes and mix them thoroughly. Note: If the standard tube concentration higher than the range of the kit, please dilute it and label as zero tube. b) Label 7 EP tubes with 1/2, 1/4, 1/8, 1/16, 1/32, 1/64 and blank respectively. Add 0.3 mL of the Sample Dilution Buffer into each tube. Add 0.3 mL of the above Standard solution (from zero tube) into 1st tube and mix them thoroughly. Transfer 0.3 mL from 1st tube to 2nd tube and mix them thoroughly, and so on. Sample Dilution Buffer is used for the blank control. Note: It is best to use Standard Solutions within 2 hours. 3. BS Working Solution: Prepare it within 15 minutes before experiment. a) Calculate required total volume of the working solution: 0.1 mL/well x quantity of wells. (Allow 0.1-0.2 mL more than the total volume.) b)Dilute the BS with BS Dilution Buffer at 1:100 and mix them thoroughly. (i.e. Add 1 µL of BS into 99 µL of BS Dilution Buffer.) Note: If crystals have formed in the BS, you can warm it with water (temperature should not exceed 30 °C) and mix it gently until the crystals have completely been dissolved.

Application Details

Sample Preparation:	• It is recommended to use fresh samples without long storage, otherwise protein degradation and denaturationmay occur in these samples, leading to false results. Samples should therefore be stored for a short periodat 2 - 8 °C or aliquoted at -20 °C (≤1 month) or -80 °C (≤ 3 months). Repeated freeze-thawcycles should be avoided. Prior to assay, the frozen samples should be slowly thawed and centrifuged toremove precipitates. • If the sample type is not specified in the instructions, a preliminary test is necessary to determinecompatibility with the kit. • If a lysis buffer is used to prepare tissue homogenates or cell culture supernatant, there is a possibilityof causing a deviation due to the introduced chemical substance.The recommended dilution factor is for reference only. • Please estimate the concentration of the samples before performing the test. If the values are not in therange of the standard curve, the optimal sample dilution for the particular experiment has to be determined.Samples should then be diluted with PBS (pH =7.0-7.2).
Assay Precision:	Intra-Assay: CV<8% Inter-Assay: CV<10%
Restrictions:	For Research Use only

Handling

Storage:	4 °C,-20 °C
Storage Comment:	1. For unopened kit: All reagents should be stored according to the labels on the vials. The Standard and 96-well Strip Plate should be stored at -20 °C upon receipt, while the other reagents should be stored at 4 °C. 2. For opened kits: the remaining reagents must be stored according to the above storage conditions. In addition, please return the unused wells to the foil pouch containing the desiccant and seal the foil pouch with the zipper.
Expiry Date:	6 months



ELISA

Image 1. Typical standard curve

