Product Information Sheet

Human IL-1 β ELISA Kit

Catalog No. EK0392

Size 96T

Range 1.56pg/ml-100pg/ml

Sensitivity < 0.15pg/ml

Specificity

No detectable cross-reactivity with any other cytokine.

Storage

Store at 4℃ for frequent use, at -20℃ for infrequent use.

Avoid multiple freeze-thaw cycles (Shipped with wet ice.)

Expiration

Four months at 4℃ and eight months at -20℃.

Application

For quantitative detection of human IL-1β in sera, plasma, body fluids, tissue lysates or cell culture supernates.

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Principle

Antagene's human IL-1β ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Human IL1-β specific-specific monoclonal antibodies were precoated onto 96-well plates. The human specific detection monoclonal antibodies were biotinylated. The test samples and biotinylated detection antibodies were added to the wells subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the human IL-1β amount of sample captured in plate. (The human IL-1 β detected in sera, plasma, body fluids, tissue lysates or cell culture supernates with this ELISA kit is mainly activated mature protein.)

Kit Components

1. Lyophilized recombinant human IL-1 β standard: 1ng/tube×2.
2. One 96-well plate precoated with anti- human IL-1 β antibody.
3. Sample diluent buffer: 30 ml
4. Biotinylated anti- human IL-1 β antibody : 130μl, dilution 1:100.
5. Antibody diluent buffer: 12ml.
6. Avidin-Biotin-Peroxidase Complex (ABC) : 130μl, dilution 1:100.
7. ABC diluent buffer: 12ml.
8. TMB color developing agent: 10ml.
9. TMB stop solution: 10ml.

Material Required But Not Provided

1. Microplate reader in standard size.
2. Automated plate washer.
3. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection.
4. Clean tubes and Eppendorf tubes.
5. Washing buffer (neutral PBS or TBS).

   Preparation of 0.01M **TBS:** Add 1.2g Tris, 8.5g Nacl; 450μl of purified acetic acid or 700μl of concentrated hydrochloric acid to 1000ml H_2O and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

   Preparation of 0.01 M **PBS:** Add 8.5g sodium chloride, 1.4g Na_2HPO_4 and 0.2g NaH_2PO_4 to 1000ml distilled water and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

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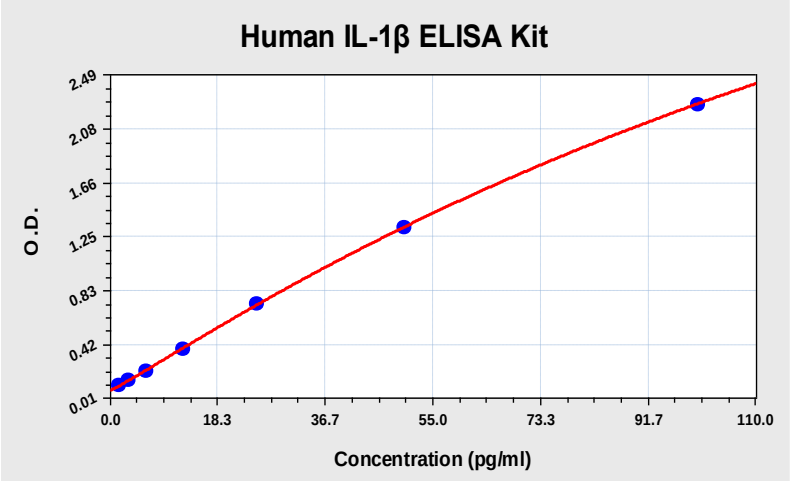
Notice for Application of Kit

1. Before using Kit, spin tubes and bring down all components to bottom of tube.
2. Duplicate well assay was recommended for both standard and sample testing.
3. Don't let 96-well plate dry, dry plate will inactivate active components on plate.
4. In order to avoid marginal effect of plate incubation due to temperature difference (reaction may be stronger in the marginal wells), it is suggested that the diluted ABC and TMB solution will be pre-warmed in 37℃ for 30 min before using.

Human IL-1βELISA Kit-1X96 Well Plate Image



Background

Interleukin-1β (IL-1β) is a potent stimulator of bone resorption whose gene is mapped to 2q14, and has been implicated in the pathogenesis of high bone turnover and osteoporosis. IL-1β, a prominent microglia-derived cytokine, caused oligodendrocyte death in coculture with astrocytes and microglia, but not in pure culture of oligodendrocytes alone[1]. It also can cause nuclear export of a specific NCOR corepressor complex, resulting in derepression of a specific subset of nuclear factor-kappa-B (NFKB)-regulated genes[2]. Furthermore, Microenvironmental IL-1β and, to a lesser extent, IL-1α are required for in vivo angiogenesis and invasiveness of different tumor cells[3]. Additional, the cooperation of IL-1β and PDGFB induces contractile-to-synthetic phenotype modulation of human aortic smooth muscle cells in culture[4]. Moreover, the association with disease may be explained by the biologic properties of IL-1β, which is an important proinflammatory cytokine and a powerful inhibitor of gastric acid secretion[5].

Reference

1. Takahashi, J. L.; Giuliani, F.; Power, C.; Imai, Y.; Yong, V. W. : Interleukin-1-beta promotes oligodendrocyte death through glutamate excitotoxicity. Ann. Neurol. 53: 588-595, 2003.
2. Baek, S. H.; Ohgi, K. A.; Rose, D. W.; Koo, E. H.; Glass, C. K.; Rosenfeld, M. G. : Exchange of N-CoR corepressor and Tip60 coactivator complexes links gene expression by NF-kappa-B and beta-amyloid precursor protein. Cell 110: 55-67, 2002.
3. Voronov, E.; Shouval, D. S.; Krelin, Y.; Cagnano, E.; Benharroch, D.; Iwakura, Y.; Dinarello, C. A.; Apte, R. N. : IL-1 is required for tumor invasiveness and angiogenesis. Proc. Nat. Acad. Sci. 100: 2645-2650, 2003.
4. Chen, C.-N.; Li, Y.-S. J.; Yeh, Y.-T.; Lee, P.-L.; Usami, S.; Chien, S.; Chiu, J.-J. : Synergistic roles of platelet-derived growth factor-BB and interleukin-1-beta in phenotypic modulation of human aortic smooth muscle cells. Proc. Nat. Acad. Sci. 103: 2665-2670, 2006.