Product Information Sheet

Rat IL-1β ELISA Kit

Catalog No. EK0393

Size 96T

Range 15.6pg/ml-1000pg/ml

Sensitivity < 1pg/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 rat IL-1β in sera, plasma, body fluids, tissue lysates or cell culture supernates.

To reorder contact us at:

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Principle

Rat IL-1β ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Rat IL-1β specific-specific monoclonal antibodies were precoated onto 96-well plates. The rat specific detection polyclonal 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 rat IL-1β amount of sample captured in plate.

Kit Components

1. Lyophilized recombinant rat IL-1β standard: 10ng/tube×2.
2. One 96-well plate precoated with anti- rat IL-1β antibody.
3. Sample diluent buffer: 30 ml
4. Biotinylated anti- rat IL-1β 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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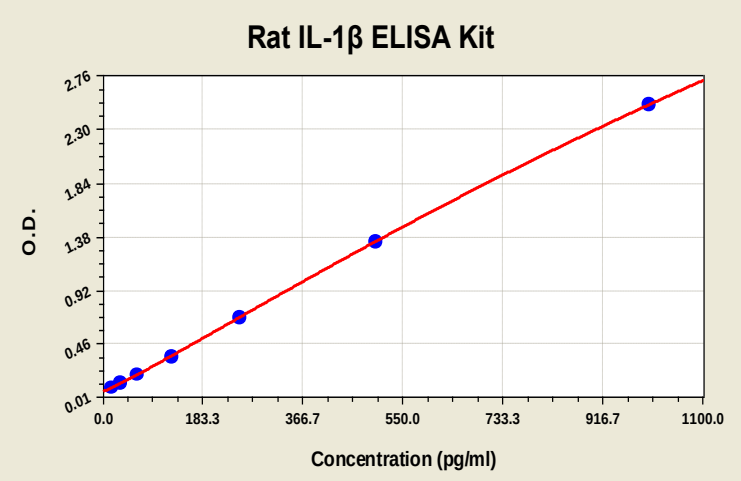
Notice for Application of Kit

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.

Rat IL-1β ELISA Kit-1X96 Well Plate Image



Background

The Interleukin 1 family is a group of 11 beta trefoil cytokines.[1] Interleukin-1, produced mainly by blood monocytes, mediates the panoply of host reactions collectively known as acute phase response .[2] Interleukin-1beta (IL-1beta) is a potent stimulator of bone resorption, and has been implicated in the pathogenesis of high bone turnover and osteoporosis.[3] IL-1beta belongs to proinflammatory cytokines, promote cancer cell adhesion and liver metastases by up-regulating the expression of vascular cell adhesion molecule-1 (VCAM-1) on hepatic sinusoidal endothelium (HSE).[4]

Reference

1. Vincent T. DeVita; Theodore S. Lawrence; Steven A. Rosenberg; Robert A. Weinberg, Ronald A. DePinho (1 April 2008). DeVita, Hellman, and Rosenberg's cancer: principles & practice of oncology. Lippincott Williams & Wilkins. pp. 506–. ISBN 9780781772075. http://books.google.com/books?id=NF90HzUFPjgC&pg=PA506. Retrieved 3 December 2010.
2. March, C. J., Mosley, B., Larsen, A., Cerretti, D. P., Braedt, G., Price, V., Gillis, S., Henney, C. S., Kronheim, S. R., Grabstein, K., Conlon, P. J., Hopp, T. P., Cosman, D. Cloning, sequence and expression of two distinct human interleukin-1 complementary DNAs. Nature 315: 641-647, 1985.
3. Langdahl, B. L., Lokke, E., Carstens, M., Stenkjaer, L. L., Eriksen, E. F. Osteoporotic fractures are associated with an 86-base pair repeat polymorphism in the interleukin-1-receptor antagonist gene but not with polymorphisms in the interleukin-1 beta gene. J. Bone Miner. Res. 15: 402-414, 2000.
4. Vidal-Vanaclocha, F., Fantuzzi, G., Mendoza, L., Fuentes, A. M., Anasagasti, M. J., Martin, J., Carrascal, T., Walsh, P., Reznikov, L. L., Kim, S.-H., Novick, D., Rubinstein, M., Dinarello, C. A. IL-18 regulates IL-1-beta-dependent hepatic melanoma metastasis via vascular cell adhesion molecule-1. Proc. Nat. Acad. Sci. 97: 734-739, 2000.

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