Product Information Sheet

Mouse SDF-1 ELISA Kit

Catalog No. EK0500

Size 96T

Range 62.5pg/ml-4000pg/ml

Sensitivity < 10pg/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 mouse SDF-1 in plasma, body fluids, tissue lysates or cell culture supernates.

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Principle

Mouse SDF-1 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Mouse SDF-1 specific-specific monoclonal antibodies were precoated onto 96-well plates. The mouse 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 mouse SDF-1 amount of sample captured in plate.

Kit Components

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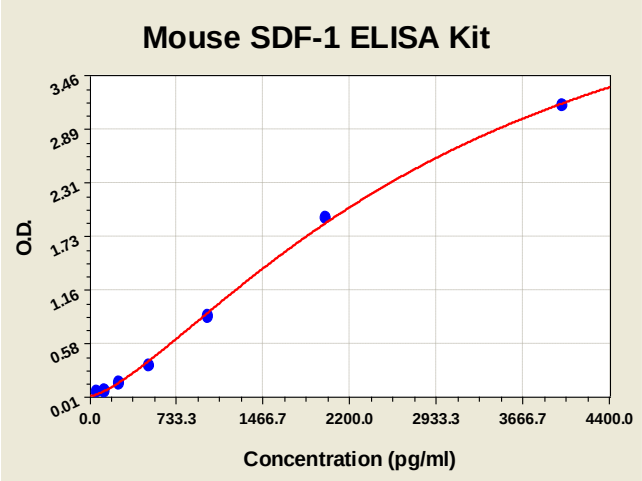
Notice for Application of Kit

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.

Mouse SDF-1 ELISA Kit-1X96 Well Plate Image



Background

SDF-1 (stromal cell-derived factor-1) is small cytokine belonging to the chemokine family that is officially designated Chemokine (C-X-C motif) ligand 12 (CXCL12). This gene is located on chromosome 10q11.1.[1] SDF-1 is produced in two forms, SDF-1α/CXCL12a and SDF-1β/CXCL12b, by alternate splicing of the same gene.[2] Chemokines are characterized by the presence of four conserved cysteines, which form two disulfide bonds. The CXCL12 proteins belong to the group of CXC chemokines, whose initial pair of cysteines are separated by one intervening amino acid. CXCL12 is strongly chemotactic for lymphocytes.[3,4,5,6] CXCL12 was shown to be expressed in many tissues in mice (including brain, thymus, heart, lung, liver, kidney, spleen and bone marrow). CXCL12 is a highly efficacious lymphocyte chemoattractant. In addition, CXCL12 induces intracellular actin polymerization in lymphocytes.[7] CXCL12 is a substrate for the matrix metalloproteinase-2, which cleaves an CXCL12 N-terminal tetrapeptide.[8] The standard product used in this kit is recombinant SDF-1 with the molecular mass of 8Kda.

Reference

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2. De La Luz Sierra et al. Differential processing of stromal-derived factor-1alpha and beta explains functional diversity. Blood 103:2452-2459, 2004.
3. Bleul et al. A highly efficacious lymphocyte chemoattractant, stromal cell-derived factor 1 (SDF-1). J. Exp. Med. 184: 1101-1109, 1996.
4. Ara et al. Impaired colonization of the gonads by primordial germ cells in mice lacking a chemokine, stromal cell-derived factor-1 (SDF-1). Proc. Nat. Acad. Sci. 100: 5319-5323, 2003.
5. Askari et al. Effect of stromal-cell-derived factor 1 on stem-cell homing and tissue regeneration in ischaemic cardiomyopathy. Lancet 362: 697-703, 2003.
6. Ma et al. Impaired B-lymphopoiesis, myelopoiesis, and derailed cerebellar neuron migration in CXCR4- and SDF-1-deficient mice. Proc. Nat. Acad. Sci. 95: 9448-9453, 1998.
7. Bleul, C. C.; Fuhlbrigge, R. C.; Casasnovas, J. M.; Aiuti, A.; Springer, T. A. : A highly efficacious lymphocyte chemoattractant, stromal cell-derived factor 1 (SDF-1). *J. Exp. Med.* 184: 1101-1109, 1996.
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