Human G-CSF ELISA Kit

Catalog No. EK0360

Size 96T

Range 31.2pg/ml-2000pg/ml

Sensitivity < 4 pg/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 G-CSF in serum, plasma, body fluids, tissue lysates or cell culture supernates.

Principle

Boster's human G-CSF ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Human G-CSF specific polyclonal antibody was precoated onto 96-well plates. The human G-CSF specific detection polyclonal antibody was biotinylated. The test samples and biotinylated detection antibodies were added to the wells subsequently and then followed by washing with TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with 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 G-CSF amount of sample captured in plate.

Kit Components

1. Lyophilized recombinant human G-CSF standard: 10ng/tube×2.
2. One 96-well plate precoated with anti- human G-CSF antibody.
3. Sample diluent buffer: 30 ml
4. Biotinylated anti- human G-CSF 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).

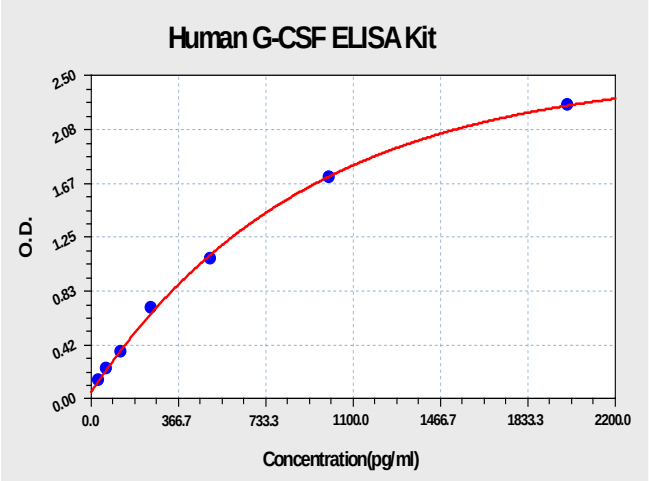
   Preparation of 0.01M **TBS:** Add 1.2g Tris, 8.5g Nacl; 450μl of purified acetic acid or 700μl of concentrated hydrochloric acid to 1000ml H_2O and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

   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.

Notice for Application of Kit

1. To inspect the validity of experiment operation and the appropriateness of sample dilution proportion, pilot experiment using standards and a small number of samples is recommended.
2. The TMB Color Developing agent is colorless and transparent before using, contact us freely if it is not the case.
3. Before using the Kit, spin tubes and bring down all components to the bottom of tubes.
4. Duplicate well assay is recommended for both standard and sample testing.
5. Don't let 96-well plate dry, for dry plate will inactivate active components on plate.
6. Don't reuse tips and tubes to avoid cross contamination.
7. To avoid to use the reagents from different batches together.
8. 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 G-CSF ELISA Kit-1X96 Well Plate Image



Background

Granulocyte colony-stimulating factor (G-CSF) is a member of the CSF family of hormone-like glycoprotein that regulates hematopoietic cell proliferation and differentiation, and it almost exclusively stimulates the colony formation of granulocytes from committed precursor cells in semi-solid agar culture.[1] G-CSF is also termed colony stimulating factor-3, and a single gene of which codes for a 177 or 180 amino acid mature protein of molecular weight 19,600. Functionally, it specifically stimulates the proliferation and differentiation of the progenitor cells for granulocytes. The effect of G-CSF on myeloid leukemias is unique among colony stimulating factors in driving the leukemic cells from a self-renewing malignant state to a mature differentiated phenotype with the concomitant loss of tumorigenicity.[2] Besides, it also prevents cardiac remodeling after myocardial infarction by activating the Jak-Stat pathway in cardiomyocytes. The recombinant form of hG-CSF is capable of supporting neutrophil proliferation in a CFU-GM assay as well as early erythroid colonies and mixed colony formation. Human gene coding for G-CSF is assigned to the q21-q22 region of chromosome 17.[3] The standard product used in this kit is recombinant human G-CSF, consisting of 175 amino acids with the molecular mass of 18.8KDa.

Reference

1. Nagata S, Tsuchiya M, Asano S, Kaziro Y, Yamazaki T, Yamamoto O, Hirata Y, Kubota N, Oheda M, Nomura H, et al. Molecular cloning and expression of cDNA for human granulocyte colony-stimulating factor. Nature 1986 Jan 30-Feb 5; 319 (6052), 415-8.
2. Harada M, Qin Y, Takano H, Minamino T, Zou Y, Toko H, Ohtsuka M, Matsuura K, Sano M, Nishi J, Iwanaga K, Akazawa H, Kunieda T, Zhu W, Hasegawa H, Kunisada K, Nagai T, Nakaya H, Yamauchi-Takihara K, Komuro I. G-CSF prevents cardiac remodeling after myocardial infarction by activating the Jak-Stat pathway in cardiomyocytes. Nat Med 2005 Mar; 11 (3):305-11. 2005 Feb 20.
3. Kanda N, Fukushige S, Murotsu T, Yoshida MC, Tsuchiya M, Asano S, Kaziro Y, Nagata S. Human gene coding for granulocyte-colony stimulating factor is assigned to the q21-q22 region of chromosome 17. Somat Cell Mol Genet

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