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Your Source of Antibody

Product Information Sheet

Human MMP-1 ELISA Kit

Catalog No. EK0458

Size 96T

Range 156pg/ml-10,000pg/ml

Sensitivity < 20pg/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 MMP-1 in sera, plasma, body fluids, tissue lysates or cell culture supernates.

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Principle

Human MMP-1 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Human MMP-1 specific-specific polyclonal antibodies were precoated onto 96-well plates. The human 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 human MMP-1 amount of sample captured in plate.

Kit Components

1. Lyophilized recombinant human MMP-1standard: 10ng/tube×2.
2. One 96-well plate precoated with anti- human MMP-1 antibody.
3. Sample diluent buffer: 30 ml
4. Biotinylated anti- human MMP-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 and Automated plate washer.
2. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection.
3. Clean tubes and Eppendorf tubes.
4. 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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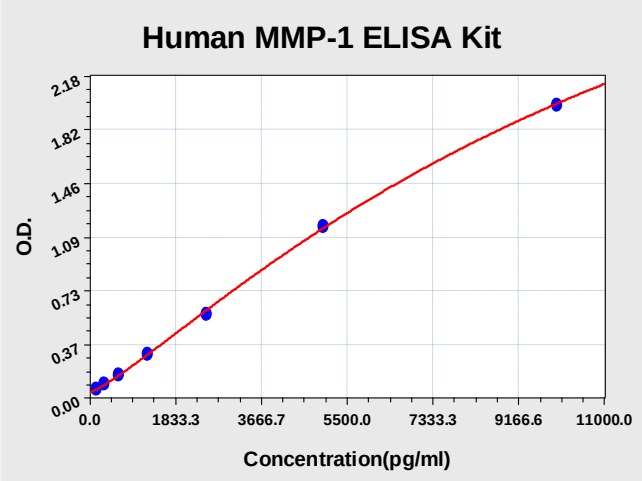
Notice for Application of Kit

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 MMP-1 ELISA Kit-1X96 Well Plate Image



Background

Matrix metalloproteinase-1 (MMP-1) is also known as collagenase. Matrix metalloproteinases (MMPs) are zinc-dependent proteases that degrade extrMMP-1llular matrix proteins. The MMPs comprise a family of at least 20 proteolytic enzymes that play an essential role in tissue remodeling. Matrix metalloproteinase-1 (MMP-1) plays an important role in the degradation of collagen in inflammatory diseases.[1] MMP1 (interstitial collagenase), MMP9 (gelatinase B) and MMP12 (macrophage elastase) are thought to be important in the development of emphysema.[2] Smoking-induced MMP-1 might be important in the skin-ageing effects of tobacco smoking.[3] The standard product used in this kit is human MMP-1 with the molecular mass of 51-53KDa. The detected MMP-1 includes zymogen and active enzyme.

Reference

1. Domeij, H.; Modeer, T.; Quezada, HC.; Yucel-Lindberg, T. Cell expression of MMP-1 and TIMP-1 in co-cultures of human gingival fibroblasts and monocytes: the involvement of ICAM-1. *Biochem. Biophys. Res. Commun.* 2005 Dec 30;338(4):1825-33. Epub 2005 Nov 2.
2. Joos, L.; He, J.-Q.; Shepherdson, M. B.; Connett, J. E.; Anthonisen, N. R.; Pare, P. D.; Sandford, A. J. The role of matrix metalloproteinase polymorphisms in the rate of decline in lung function. *Hum. Molec. Genet.* 11: 569-576, 2002.
3. Lahmann, C.; Bergemann, J.; Harrison, G.; Young, A. R. Matrix metalloproteinase-1 and skin ageing in smokers. (Letter) *Lancet* 357: 935-936, 2001.

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