

Human BMP-2 ELISA Kit

Catalog No. GWB-ZZD138
Size 96T
Range 62.5pg/ml-4000pg/ml
Sensitivity < 2pg/ml

Specificity

No detectable cross-reactivity with any other cytokine.

Storage

Store at 4°C for frequent use, at -20°C for infrequent use.
Avoid multiple freeze-thaw cycles (Shipped with wet ice.)

Expiration

Four months at 4°C and eight months at -20°C.

Application

For quantitative detection of human BMP-2 in sera, plasma, body fluids, tissue lysates or cell culture supernates.

Principle

GenWay's human BMP-2 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Human BMP-2 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 BMP-2 amount of sample captured in plate.

Kit Components

1. Lyophilized recombinant human BMP-2 standard: 10ng/tube×2.
2. One 96-well plate precoated with anti- human BMP-2 antibody.
3. Sample diluent buffer: 30 ml
4. Biotinylated anti- human BMP-2 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 H₂O and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

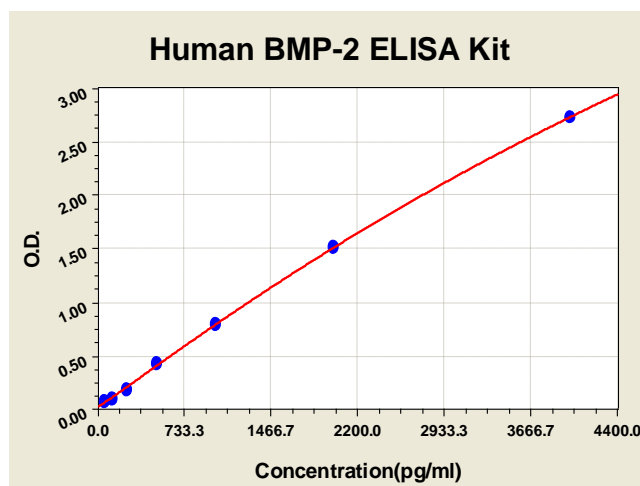
Preparation of 0.01 M **PBS**: Add 8.5g sodium chloride, 1.4g Na₂HPO₄ and 0.2g NaH₂PO₄ to 1000ml distilled water and adjust pH to 7.2-7.6. Finally, adjust the total volume to 1L.

Product Information Sheet

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°C for 30 min before using.

Human BMP-2 ELISA Kit-1X96 Well Plate Image



Background

Bone morphogenetic protein-2 (BMP-2, BMP 2A) belongs to the transforming growth factor beta (TGF- β) superfamily. It is thought to be involved in cartilage and bone formation during embryogenesis, but may have additional functions in morphogenesis as implied by its expression in various organs and embryonic tissues of mice.¹ BMP-2 has been identified as a candidate mediator of retinoid activity. BMP-2 protein induces medulloblastoma cell apoptosis, whereas the BMP-2 antagonist noggin blocks both retinoid and BMP-2-induced apoptosis. BMP-2 also induces p38 mitogen-activated protein kinase (MAPK), which is necessary for BMP-2 and retinoid-induced apoptosis.² Bone morphogenetic proteins (BMPs) are known to promote osteogenesis, and clinical trials are currently underway to evaluate the ability of certain BMPs to promote fracture-healing and spinal fusion.³ The standard product used in this kit is recombinant human BMP-2, constituting dimer by two chains of 114 amino acids with the molecular mass of 26KDa.

Reference

1. Gopal Rao, V. V. N.; Loffler, C.; Wozney, J. M.; Hansmann, I. The gene for bone morphogenetic protein 2A (BMP2A) is localized to human chromosome 20p12 by radioactive and nonradioactive in situ hybridization. *Hum. Genet.* 90: 299-302, 1992.
2. Hallahan, A. R.; Pritchard, J. I.; Chandraratna, R. A. S.; Ellenbogen, R. G.; Geyer, J. R.; Overland, R. P.; Strand, A. D.; Tapscott, S. J.; Olson, J. M. BMP-2 mediates retinoid-induced apoptosis in medulloblastoma cells through a paracrine effect. *Nature Med.* 9: 1033-1038, 2003.
3. Cheng, H.; Jiang, W.; Phillips, F. M.; Haydon, R. C.; Peng, Y.; Zhou, L.; Luu, H. H.; An, N.; Breyer, B.; Vanichakarn, P.; Szatkowski, J. P.; Park, J. Y.; He, T.-C. Osteogenic activity of the fourteen types of human bone morphogenetic proteins (BMPs). *J. Bone Joint Surg.* 85-A: 1544-1552, 2003.

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