Human BMP-5 Protein (Fc Tag)

Catalog Number: **10214-H01H**

General Information

Gene Name Synonym:

BMP5

Protein Construction:

A DNA sequence encoding the carboxy-terminal domain (Gln 324-His 454) (the mature chain) of human BMP5 (NP_066551.1) was expressed with the fused Fc region of human IgG1 at the N-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Glu 20

Molecular Mass:

The recombinant human Fc/BMP5 is a disulfide-linked homodimeric protein. The reduced monomer consists of 367 amino acids and has a predicted molecular mass of 41.5 kDa. As a result of glycosylation, the apparent molecular mass of rhFc/BMP5 monomer is approximately 50-55 kDa in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

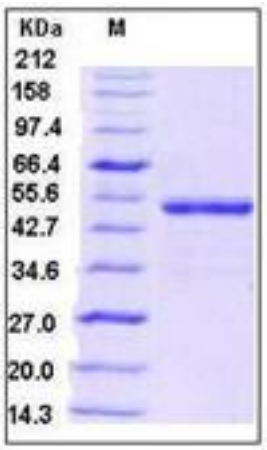
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Bone Morphogenetic Protein 5 (BMP-5) is a member of the structurally and functionally related bone morphogenetic proteins (BMPs) which constitute a novel subfamily of the transforming growth factor β (TGF-β) superfamily. In agreement with a possible role in the control of cell death, BMP-5 exhibited a regulated pattern of expression in the interdigital tissue. Transcripts of BMP-5 and BMP-5 protein were abundant within the cytoplasm of the fragmenting apoptotic interdigital cells in a way suggesting that delivery of BMPs into the tissue is potentiated during apoptosis. Gain-of-function experiments demonstrated that BMP-5 has the same effect as other interdigital BMPs inducing apoptosis in the undifferentiated mesoderm and growth in the prechondrogenic mesenchyme. BMP-5 is a member of the 60A subgroup of BMPs, other members of which have been shown to stimulate dendritic growth in central and peripheral neurons. The signaling pathway that mediates the dendrite-promoting activity of BMP-5 may involve binding to BMPR-IA and activation of Smad-1, and relative levels of BMP antagonists such as noggin and follistatin may modulate BMP-5 signaling. Since BMP-5 is expressed at relatively high levels not only in the developing but also the adult nervous system, these findings suggest the possibility that BMP-5 regulates dendritic morphology not only in the developing, but also the adult nervous system. BMP-5 may play important roles not only in myocardial differentiation, but also in the formation and maintenance of endocardial cushion tissue. Additionally, high expression level of BMP-5 has been detected in certain tumors of mesenchymal origin.

References

1.Yamagishi T, *et al.* (2001) Expression of bone morphogenetic protein-5 gene during chick heart development: possible roles in valvuloseptal endocardial cushion formation. Anat Rec. 264(4): 313-6. 2.Beck HN, *et al.* (2001) Bone morphogenetic protein-5 (BMP-5) promotes dendritic growth in cultured sympathetic neurons. BMC Neurosci. 2:12. 3.Zuzarte-Lus V, *et al.* (2004) A new role for BMP5 during limb development acting through the synergic activation of Smad and MAPK pathways. Dev Biol. 272(1): 39-52.