Recombinant BMP4 protein (His tag)

Catalog Number	544392
Synonyms	BMP-4; Bone morphogenetic protein 2B; BMP-2B
Species	Human
Expression System	E. coli
Accession	P12644
Molecular Weight	Predictes a molecular mass of 14.78 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 15 kDa band.

Product Information

Sequence Region	293-408
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>87%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 293-408 aa (P12644) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human BMP-4 (293-408) is a high-quality protein fragment derived from Bone Morphogenetic Protein 4, a key growth factor in developmental processes. This 116-amino acid fragment is engineered for stability and solubility, making it ideal for structural studies, biochemical assays, and signaling pathway research. Bone Morphogenetic Protein 4 (BMP-4) is a member of the TGF-β superfamily that plays essential roles in neurogenesis, vascular development, angiogenesis, and osteogenesis. It functions by initiating the canonical BMP signaling cascade through association with BMPR1A and BMPR2 receptors, leading to phosphorylation of SMAD1/5/8 and regulation of target gene transcription. BMP-4 also activates non-canonical pathways including ERK/MAP kinase, PI3K/Akt, and SRC cascades, contributing to processes such as angiogenesis through VEGFR2 activation. The protein is naturally secreted and localized to the extracellular space and matrix, where it participates in critical developmental events including mammary gland development, hair follicle inhibition, and tooth morphogenesis through interactions with pathways involving MSX1 and Wnt signaling.