Recombinant BMP2 protein (His tag)

Catalog Number	542121
Synonyms	BMP-2; Bone morphogenetic protein 2A; BMP-2A
Species	Human
Expression System	E. coli
Accession	P12643
Molecular Weight	Predictes a molecular mass of 14.56 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 15 kDa band.

Product Information

Sequence Region	283-396
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, 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 283-396 aa (P12643) 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-2 Fragment (283-396) is a high-purity, stable protein designed for structural and functional studies. This fragment captures a soluble and biologically relevant domain of Bone Morphogenetic Protein 2 (BMP-2), a key growth factor in developmental processes such as osteogenesis and neurogenesis. Ideal for biochemical assays, signaling pathway analysis, and in vitro research, this product ensures reliability and reproducibility in experimental workflows. Bone Morphogenetic Protein 2 (BMP-2), encoded by the BMP2 gene in Homo sapiens, is a member of the TGF-beta superfamily and plays essential roles in developmental processes, including bone and cartilage formation, cardiogenesis, and neurogenesis. It functions by initiating the canonical BMP signaling cascade through binding to type I (BMPR1A) and type II (BMPR2) receptors, leading to phosphorylation of SMAD1/5/8 and regulation of target gene transcription. BMP-2 also activates non-canonical pathways, such as ERK/MAP kinase signaling, to promote osteoblast differentiation and myoblast-to-osteoblast transition via the EIF2AK3-EIF2A-ATF4 pathway. Additionally, it regulates hepcidin antimicrobial peptide (HAMP) expression and contributes to odontoblast differentiation. As a secreted protein, BMP-2 is localized extracellularly, facilitating its role in cell-cell communication and tissue development. The provided fragment (residues 283-396) represents a stable, soluble unit selected for structural and biochemical analyses, enabling focused investigation of BMP-2's functional domains.