

Recombinant Human BMP7 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50076

Size: 10ug, 100ug

Protein Name: Bone morphogenetic protein 7 (BMP-7) (Osteogenic protein 1) (OP-1) (Eptotermin alfa)

Synonym: BMP7, OP1

UniProt ID: P18075

UniProt Link: www.uniprot.org/uniprotkb/P18075/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 431 AA

Molecular Weight: 49 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MHVRSLRAAAPHSFVALWAPLFLRLSALADFSLDNEVHSSFIHRRRLRSQERREMQREILSILGLPHRP
RPHLQGGKHNSAPMFMLDLYNAMAVEEGGGPGGGQGFSSYPYKAVFSTQGPPLASLQDSHFLTDADM
VMSFVNLVEHDKEFFHPRYHHREFRFDLSKIPEGEAVTAAEFRIYKDYIRERFDNETFRISVYQVLQE
HLGRESDLFLDSRTLWASEEGWLVDITATSNHWWVNPRHNLGLQLSVETLDGQSINPKLAGLIGR
HGPQNKQPFMVAFFKATEVHFRSIRSTGSKQRSQNRSKTPKNQEALRMANVAENSSSDQRQACKK
HELYVSFRDLGWQDWIIAPEGYAAYYCEGECAFLNSYMNATNHAIVQTLVHFINPETVPKPCCAPT
QLNAISVLYFDDSSNVILKKYRNMVVRACGCH

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Bone morphogenetic protein 7 (BMP-7) (Osteogenic protein 1) (OP-1) (Eptoterminal alpha) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Growth factor of the TGF-beta superfamily that plays an important role in various biological processes, including embryogenesis, hematopoiesis, neurogenesis and skeletal morphogenesis (PubMed:31208997). Initiates the canonical BMP signaling cascade by associating with type I receptor ACVR1 and type II receptor ACVR2A (PubMed:12667445, PubMed:9748228). Once all three components are bound together in a complex at the cell surface, ACVR2A phosphorylates and activates ACVR1. In turn, ACVR1 propagates signal by phosphorylating SMAD1/5/8 that travel to the nucleus and act as activators and repressors of transcription of target genes (PubMed:12478285). For specific functions such as growth cone collapse in developing spinal neurons and chemotaxis of monocytes, also uses BMPR2 as type II receptor (PubMed:31208997). Can also signal through non-canonical pathways such as P38 MAP kinase signaling cascade that promotes brown adipocyte differentiation through activation of target genes, including members of the SOX family of transcription factors (PubMed:27923061). Promotes the expression of HAMP, this is repressed by its interaction with ERFE (PubMed:30097509).

Subcellular Localization: Secreted.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.