

AR31188PU-N

Recombinant Human/Murine/Rat BMP2 / BMP2A (CHO cell derived) - Purified

Alternate names:

BMP-2, BMP-2A, Bone morphogenetic protein 2

Quantity:

10 µg

Background:

BMPs (Bone Morphogenetic Proteins) belong to the TGF-β superfamily of structurally related signaling proteins. BMP-2 is a potent osteoinductive cytokine, capable of inducing bone and cartilage formation in association with an osteoconductive carrier such as collagen and synthetic hydroxyapatite. In addition to its osteogenic activity, BMP-2 appears to play an important role in cardiac morphogenesis, and is expressed in a variety of other tissues, including lung, liver, spleen, prostate, ovary, and small intestine. The functional form of BMP-2 is a 26 kDa protein composed of two identical 114 amino acid polypeptide chains (monomers) linked by a single disulfide bond. Each BMP-2 monomer is expressed as the C-terminal part of a precursor polypeptide, which also contains a 23 amino acid signal sequence for secretion, and a 259 amino acid propeptide. After dimerization of this precursor, the covalent bonds between the propeptide (which is also a disulfide-linked homodimer) and the mature BMP-2 ligand are cleaved by a furin-type protease.

Uniprot ID:
[P12643](#)
NCBI:
[NP_001191.1](#)
GeneID:
[650](#)
Species:

Human

Source:

CHO cells

Format:
State: Lyophilized (sterile filtered) purified protein

Purity: >95% pure by SDS-PAGE gel and HPLC analyses.

Endotoxin Level: < 0.1 ng/µg (1EU/µg)

Reconstitution: Restore in water to a concentration of 0.1-1.0 mg/ml.

This solution can then be diluted into other aqueous buffers and stored at 2-8°C for 1 week or -20°C for future use.

Description:

Recombinant Human BMP-2 derived from CHO cells is a homodimeric glycoprotein that consists of two 114 amino acid polypeptide chains linked by a single disulfide bond. Due to glycosylation, CHO cell-derived Human BMP-2 migrates at an apparent molecular weight of approximately 28-29 kDa by SDS-PAGE analysis under non-reducing conditions.

Mature sequence is complete identical with Mouse and Rat.

AA Sequence:

QAKHKQRKRL KSSCKRHPLY VDFSDVGWND WIVAPPGYHA FYCHGECFPF LADHLNSTNH
AIVQTLVNSV NSKIPKACCV PTELSAISML YLDENEKVVL KNYQDMVVEG CGCR

Biological Activity: Determined by its ability to induce alkaline phosphatase production by ATDC-5 cells. The expected ED₅₀ for this effect is 40-100 ng/ml.

Molecular weight: 26.0 kDa (2x 114 amino acids)

Add. Information:	Centrifuge the vial prior to opening!
Storage:	Store lyophilized at 2-8°C for 6 months or at -20°C long term. After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term. Avoid repeated freezing and thawing. Shelf life: one year from despatch.
General Readings:	1. Lyssiotis CA, Walker J, Wu C, Kondo T, Schultz PG, Wu X. Inhibition of histone deacetylase activity induces developmental plasticity in oligodendrocyte precursor cells. <i>Proc Natl Acad Sci U S A</i>. 2007 Sep 18;104(38):14982-7. Epub 2007 Sep 12. PubMed PMID: 17855562. 2. Chung YI, Ahn KM, Jeon SH, Lee SY, Lee JH, Tae G. Enhanced bone regeneration with BMP-2 loaded functional nanoparticle-hydrogel complex. <i>J Control Release</i>. 2007 Aug 16;121(1-2):91-9. Epub 2007 Jun 2. PubMed PMID: 17604871. 3. Huang MS, Morony S, Lu J, Zhang Z, Bezouglaia O, Tseng W, et al. Atherogenic phospholipids attenuate osteogenic signaling by BMP-2 and parathyroid hormone in osteoblasts. <i>J Biol Chem</i>. 2007 Jul 20;282(29):21237-43. Epub 2007 May 22. PubMed PMID: 17522049. 4. Giuliani N, Morandi F, Tagliaferri S, Lazzaretti M, Bonomini S, Crugnola M, et al. The proteasome inhibitor bortezomib affects osteoblast differentiation in vitro and in vivo in multiple myeloma patients. <i>Blood</i>. 2007 Jul 1;110(1):334-8. Epub 2007 Mar 19. PubMed PMID: 17371942. 5. Wong CE, Paratore C, Dours-Zimmermann MT, Rochat A, Pietri T, Suter U, et al. Neural crest-derived cells with stem cell features can be traced back to multiple lineages in the adult skin. <i>J Cell Biol</i>. 2006 Dec 18;175(6):1005-15. Epub 2006 Dec 11. PubMed PMID: 17158956. 6. Chou YT, Yang YC. Post-transcriptional control of Cited2 by transforming growth factor beta. Regulation via Smads and Cited2 coding region. <i>J Biol Chem</i>. 2006 Jul 7;281(27):18451-62. Epub 2006 May 4. PubMed PMID: 16675452. 7. Yamashita A, Takada T, Narita J, Yamamoto G, Torii R. Osteoblastic differentiation of monkey embryonic stem cells in vitro. <i>Cloning Stem Cells</i>. 2005;7(4):232-7. PubMed PMID: 16390259. 8. Giuliani N, Colla S, Morandi F, Lazzaretti M, Sala R, Bonomini S, et al. Myeloma cells block RUNX2/CBFA1 activity in human bone marrow osteoblast progenitors and inhibit osteoblast formation and differentiation. <i>Blood</i>. 2005 Oct 1;106(7):2472-83. Epub 2005 Jun 2. PubMed PMID: 15933061.