

**DATASHEET**  
Version 20181206**BMP-2, Human****Cat. No.:** Z02913-10**Size:** 10.0 ug**Synonyms:** BMP-2, BMP2A, Bone morphogenetic protein 2, BMP-2A, BMP2**Description:**

Human Bone Morphogenetic Protein-2 (BMP-2) is a bone-growth regulatory factor and belongs to the transforming growth factor-beta (TGF-beta) superfamily. Human Bone Morphogenetic Protein-2 (BMP-2) is synthesized as large precursor molecule (Met<sup>1</sup>-Arg<sup>396</sup>, with a signal peptide from Met<sup>1</sup> to Gly<sup>23</sup>), propeptide (Leu<sup>24</sup>-Arg<sup>282</sup>) of which is cleaved by PCSK5 (Proprotein Convertase Subtilisin/Kexin type 5). The active form consists of a dimer of two identical proteins which are linked by a disulfide bond at Cys<sup>360</sup>. It plays an important role in the development of bone and cartilage, cardiac cell differentiation and epithelial to mesenchymal transition. It is also involved in the hedgehog pathway, TGF-beta signaling pathway, and in cytokine-cytokine receptor interaction.

Recombinant human Bone Morphogenetic Protein-2 (rhBMP-2) produced in *E. coli* is a disulfide-linked homodimer containing two non-glycosylated polypeptide chains of 115 amino acids. A fully biologically active molecule, rhBMP-2 has a molecular mass of 26 kDa analyzed by non-reducing SDS-PAGE and is obtained by proprietary refolding and chromatographic techniques at GenScript.

**Amino Acid Sequence:**

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00001 MQAKHKQRKR LKSSCKRHPL YVDFSDVGWN DWIVAPPGYH
00041 AFYCHGEC PF PLADHLNSTN HAIVQTLVNS VNSKIPKACC
00081 VPTELSAISM LYLDENEKVV LKNYQDMVVE GCGCR
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**Source:** *E. coli***Species:** Human**Biological Activity:** Assay #1: Measured by its ability to induce alkaline phosphatase production by ATDC-5 Cells, The ED<sub>50</sub> for this effect is typically 0.07-0.2 µg/mL.Assay #2: Measured by its ability to induce alkaline phosphatase production by C2C12 cells, The ED<sub>50</sub> for this effect is typically 0.2-1 µg/mL.**Molecular Weight:** 26 kDa, observed by non-reducing SDS-PAGE**Formulation:** Lyophilized after extensive dialysis against 50 mM acetic acid.**Reconstitution:** Reconstituted in 20 mM AcOH or 5 mM HCl. The solubility should be at 100 µg/ml.**Purity:** > 95% as analyzed by non-reducing SDS-PAGE and HPLC analyses**Endotoxin Level:** < 1 EU/µg, determined by LAL method.**Storage:** Lyophilized recombinant human Bone Morphogenetic Protein-2 (rhBMP-2) remains stable up to 6 months at lower than -70°C from date of receipt. Upon reconstitution, rhBMP-2 should be stable up to 2 weeks at 4°C or up to 3 months at -20°C.