

## Overview

<b>Synonyms</b>	BMP-2, BMP2A, Bone morphogenetic protein 2, BMP-2A, BMP2
<b>Description</b>	<p><b>Human Bone Morphogenetic Protein-2 (BMP-2)</b> is a bone-growth regulatory factor and belongs to the transforming growth factor-beta (TGF-beta) superfamily. <b>Human Bone Morphogenetic Protein-2 (BMP-2)</b> 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.</p> <p><b>Recombinant human Bone Morphogenetic Protein-2 (rhBMP-2)</b> produced in <i>E. coli</i> 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.</p>
<b>Species Source</b>	Human <i>E. coli</i>
<b>Biological Activity</b>	<p><b>Assay #1:</b> 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.</p> <p><b>Assay #2:</b> 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.</p>
<b>Sequence</b>	<p>MQAKHKQRKR LKSSCKRHPL YVDFSDVGWN DWIVAPPGYH AFYCHGECPF PLADHLNSTN HAIVQTLVNS VNSKIPKACC VPELSAISM LYLDENEKVV LKNYQDMVVE GCGCR</p>

## Properties

<b>Measured Molecular Weight</b>	26 kDa, observed by non-reducing SDS-PAGE
<b>Purity</b>	> 95% as analyzed by non-reducing SDS-PAGE and HPLC analyses
<b>Formulation</b>	Lyophilized after extensive dialysis against 50 mM acetic acid.
<b>Reconstitution</b>	Reconstituted in 20 mM AcOH or 5 mM HCl. The solubility should be at 100 µg/ml.
<b>Endotoxin Level</b>	< 1 EU/µg, determined by LAL method.
<b>Storage</b>	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.

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