

Datasheet for ABIN2017697
BMP2 Protein (AA 283-396)



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4 Images

15 Publications

Overview

Quantity:	50 µg
Target:	BMP2
Protein Characteristics:	AA 283-396
Origin:	Human
Source:	Escherichia coli (E. coli)
Protein Type:	Recombinant
Biological Activity:	Active

Product Details

Characteristics:	ED50 < 1 µg/mL, measured by alkaline phosphatase induction assay using C2C12 cells. AA 283-396, expressed with an N-terminal Met.
Purity:	> 95 % as analyzed by non-reducing SDS-PAGE.
Endotoxin Level:	< 1 EU/µg, determined by LAL method.

Target Details

Target:	BMP2
Alternative Name:	Bone Morphogenetic Protein-2 (BMP-2) (BMP2 Products)
Background:	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 (Met1-Arg396, with a signal peptide from Met1 to Gly23), propeptide (Leu24-Arg282) of which is cleaved by PCSK5

Target Details

(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 Cys360. 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.

Synonyms: BMP-2, BMP2A, Bone morphogenetic protein 2, BMP-2A, BMP2

Molecular Weight: 26 kDa, observed by non-reducing SDS-PAGE

UniProt: [P12643](#)

Pathways: [Regulation of Hormone Metabolic Process](#), [Regulation of Hormone Biosynthetic Process](#), [Regulation of Muscle Cell Differentiation](#), [Growth Factor Binding](#), [Positive Regulation of fat Cell Differentiation](#)

Application Details

Restrictions: For Research Use only

Handling

Format: Lyophilized

Reconstitution: Reconstituted in 20 mM AcOH or 5 mM HCl. The solubility should be at 100 µg/mL.

Buffer: Lyophilized after extensive dialysis against 50 mM acetic acid.

Storage: -80 °C

Storage Comment: Lyophilized recombinant human Bone Morphogenetic Protein-2 (rhBMP-2) remains stable up to 6 months at -80 °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.

Expiry Date: 6 months

Publications

Product cited in: Wang, Park, La Marca, Than, Lin: "BMP-2 inhibits tumor-initiating ability in human renal cancer stem cells and induces bone formation." in: **Journal of cancer research and clinical oncology**,

Vol. 141, Issue 6, pp. 1013-24, (2015) ([PubMed](#)).

Chanchareonsook, Tideman, Feinberg, Jongpaiboonkit, Lee, Flanagan, Krishnaswamy, Jansen: "Segmental mandibular bone reconstruction with a carbonate-substituted hydroxyapatite-coated modular endoprosthetic poly(ϵ -caprolactone) scaffold in *Macaca fascicularis*." in: **Journal of biomedical materials research. Part B, Applied biomaterials**, Vol. 102, Issue 5, pp. 962-76, (2014) ([PubMed](#)).

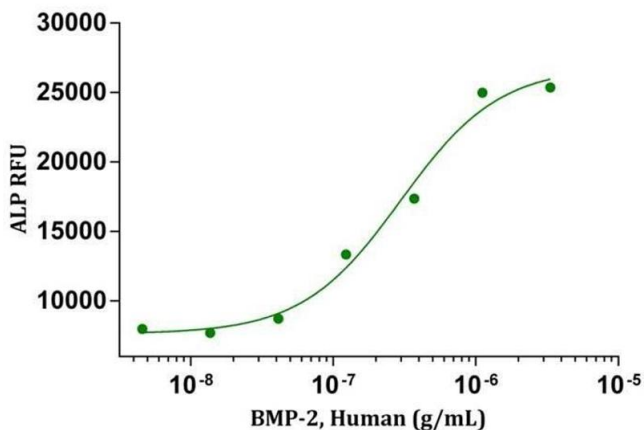
Clark, Milbrandt, Hilt, Puleo: "Mechanical properties and dual drug delivery application of poly(lactic-co-glycolic acid) scaffolds fabricated with a poly(ϵ -amino ester) porogen." in: **Acta biomaterialia**, Vol. 10, Issue 5, pp. 2125-32, (2014) ([PubMed](#)).

Alegre-Aguarón, Sampat, Xiong, Colligan, Bulinski, Cook, Ateshian, Brown, Hung: "Growth factor priming differentially modulates components of the extracellular matrix proteome in chondrocytes and synovium-derived stem cells." in: **PLoS ONE**, Vol. 9, Issue 2, pp. e88053, (2014) ([PubMed](#)).

Cushnie, Ulery, Nelson, Deng, Sethuraman, Doty, Lo, Khan, Laurencin: "Simple signaling molecules for inductive bone regenerative engineering." in: **PLoS ONE**, Vol. 9, Issue 7, pp. e101627, (2014) ([PubMed](#)).

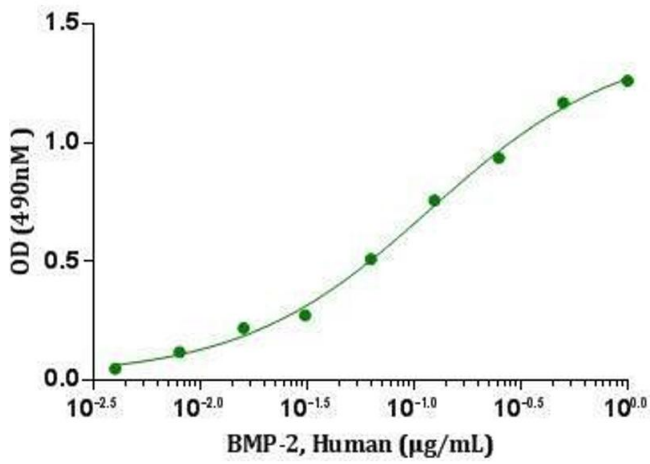
There are more publications referencing this product on: [Product page](#)

Images



Activity Assay

Image 1. BMP-2, Human induced alkaline phosphatase production in C2C12 cells. The ED50 for this effect is less than 1 μ g/mL(0.68 μ g/mL).



Activity Assay

Image 2. BMP-2, Human induced alkaline phosphatase production in ATDC-5 cells. The ED50 for this effect is less than 1µg/mL(0.09µg/mL).

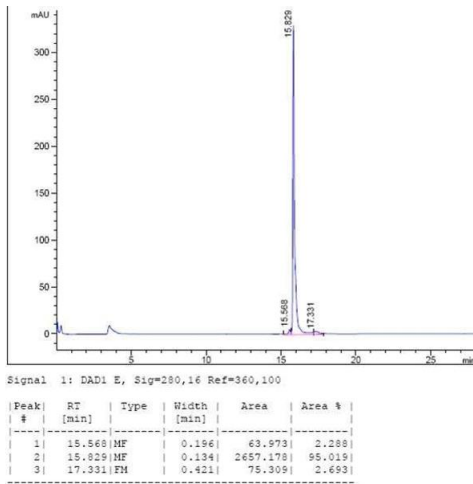


Image 3.

Please check the [product details page](#) for more images. Overall 4 images are available for ABIN2017697.