# Active Bone Morphogenetic Protein 7 (BMP7)

*Catalog#:PEM12502*

## 概述（Summary）

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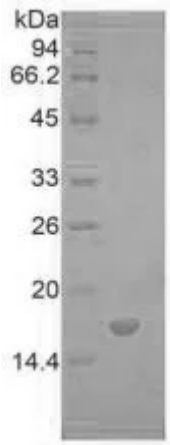
|---|---|
| **别称（Alternative Names）** | OP1; Osteogenic Protein-1; Eptotermin alfa |
| **纯度（Purity）** | Greater than 97% as determined by reducing SDS-PAGE. |
| **内毒素（Endotoxin level）** | Please contact with the lab for this information |
| **蛋白构建（Construction）** | 【Ser292-His430】 |
| **Accession #** | P23359 |
| **表达宿主（Host）** | E.coli |
| **种属（Species）** | Mus musculus (Mouse) |
| **预测分子量（Predicted MW）** | 16 kDa |
| **制剂（Form）** | Lyophilized from a 0.2 μm filtered solution of 20mM Tris, 150mM NaCl, pH8.0, containing 1mM EDTA, 1mM DTT, 0.01% SKL, 5% Trehalose and Proclin300. |
| **运输方式（Shipping）** | The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below. |
| **稳定性&储存（Stability &Storage）** | 12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles. |
| **复溶（Reconstitution）** | Reconstitute in 20mM Tris, 150mM NaCl (PH8.0) to a concentration of 0.1-1.0 mg/mL. Do not vortex. |
| **背景介绍（References）** | Growth factor of the TGF-beta superfamily that plays important role in various biological processes, including embryogenesis, hematopoiesis, neurogenesis and skeletal morphogenesis. Initiates the canonical BMP signaling cascade by associating with type I receptor ACVR1 and type II receptor ACVR2A. 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. For specific functions such as growth cone collapse in developing spinal neurons and chemotaxis of monocytes, uses |

also BMPR2 as type II receptor. 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.

## 电泳图（SDS-PAGE image）




Greater than 97% as determined by reducing SDS-PAGE.

## 活性图（Bioactivity image）

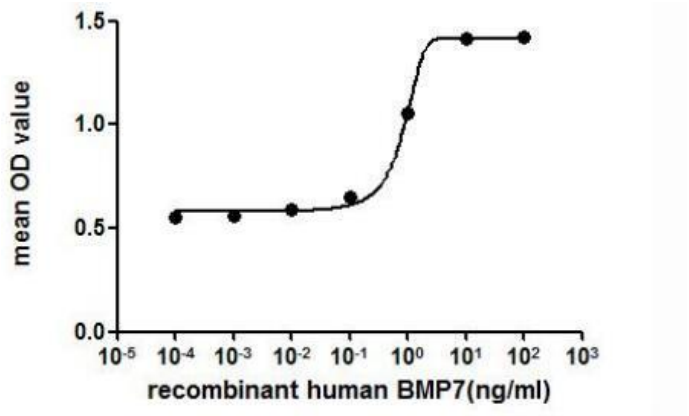



**Figure 2. The dose-effect curve of BMP7 on MDA-MB-231 cells**

BMP7 (Bone morphogenetic protein 7), which belongs to the TGF-β superfamily, is a signaling molecule with the ability to promote bone formation. BMP7 has also been implicated in various types of cancer, including breast cancer. It has been reported that BMP7 treatment induced cell growth promotion of MDA-MB-231 breast cancer line. To test the effect of BMP7 on cell proliferation, MDA-MB-231 cells were seeded into triplicate wells of 96-well plates at a density of 2,000 cells/well and allowed to attach overnight, then the medium was replaced with serum-free standard DMEM prior to the addition of various concentrations of BMP7. After incubated for 72h, cells were observed by inverted microscope and cell proliferation was measured by Cell Counting Kit-8 (CCK-8). Briefly, 10μL of CCK-8 solution was added to each well of the plate, then the absorbance at 450nm was measured using a microplate reader after incubating the plate for 1-4 hours at 37°C. The dose-effect curve of BMP7 was shown in Figure 2. It was obvious that BMP7 significantly promoted cell proliferation of MDA-MB-231 cells. The ED50 for this effect is typically 3.483 to 9.017 ng/mL.

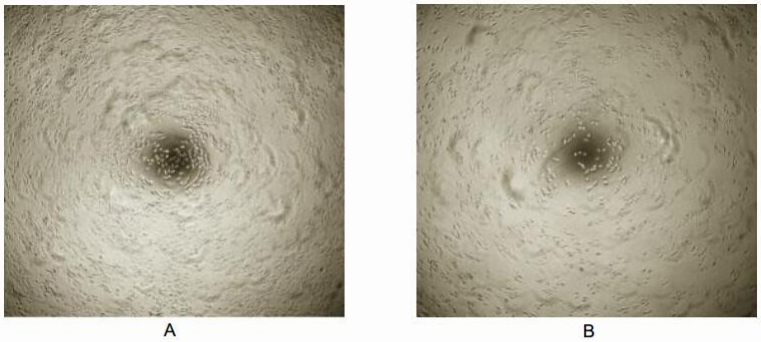



**Figure 1. Cell proliferation of MDA-MB-231 cells after stimulated with BMP7.**

**(A) MCF-7 cells cultured in DMEM, stimulated with 10ng/mL BMP7 for 72h;**

**(B) Unstimulated MDA-MB-231 cells cultured in DMEM for 72h.**

## 注意事项（Note）

For Research Use Only , Not for Diagnostic Use.