

## BMP-4

### Bone Morphogenetic Protein-4

human, recombinant, *E. coli*

Cat. No.	Amount
PR-693	10 $\mu$ g

For *in vitro* use only  
Quality guaranteed for 12 months  
Store at -20°C

#### Avoid freeze / thaw cycles

#### Form

Lyophilized.

#### Solubility

It is recommended to reconstitute the lyophilized BMP-4 in sterile bidest. H<sub>2</sub>O not less than 100  $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

#### Endotoxin

Less than 0.1 ng/ $\mu$ g (IEU/ $\mu$ g) of BDNF

#### Purity

$\geq$  95% by SDS-PAGE, RP-HPLC, and FPLC.

#### Description

Bone morphogenetic proteins (BMPs) are key regulators of bone formation.

Bone morphogenetic protein 4, BMP4, plays also an important role in the development of various organs including the lungs. Little is known regarding the regulation of Bmp4 gene expression in any organ. In the lung, indirect evidence indicates that NKX2.1, a homeodomain transcriptional factor with a demonstrated role in lung morphogenesis, may be a potential upstream regulator of Bmp4 gene expression. Hematopoietic cytokines and bone morphogenetic protein-4 (BMP-4) have been shown to modulate the proliferative and differentiative potential of definitiv human fetal, neonatal, and adult hematopoietic progenitors, in addition to their role in early hematopoietic development.

Recombinant human BMP-4 produced in *E. coli* is a monomeric, non-glycosylated, polypeptide chain containing 116 amino acids and having a molecular mass of 13.009 kDa.

BMP-4 is purified by proprietary chromatographic techniques.

#### Selected References:

- Pang *et al.* (2004) Effect of recombinant human bone morphogenetic protein-4 dose on bone formation in a rat calvarial defect model. *J. Periodontol.* **75**:1364.
- Shimizu *et al.* (2004) Differential expression of bone morphogenetic protein 4-6 (BMP-4, -5, and -6) and growth differentiation factor-9 (GDF-9) during ovarian development in neonatal pigs. *Domest. Anim. Endocrinol.* **27**:397.
- Peng *et al.* (2004) Development of a self-inactivating tet-on retroviral vector expressing bone morphogenetic protein 4 to achieve regulated bone formation. *Mol. Ther.* **9**:885.
- Sasaki *et al.* (2004) Sonic hedgehog and bone morphogenetic protein 4 expressions in the hindgut region of murine embryos with anorectal malformations. *J. Pediatr. Surg.* **39**:170. discussion 170.
- Zhu *et al.* (2004) NKX2.1 regulates transcription of the gene for human bone morphogenetic protein-4 in lung epithelial cells. *Gene.* **327**:25.
- Wahl *et al.* (2004) Transcriptome analysis of early chondrogenesis in ATDC5 cells induced by bone morphogenetic protein 4. *Genomics.* **83**:45.
- Chadwick *et al.* (2003) Cytokines and BMP-4 promote hematopoietic differentiation of human embryonic stem cells. *Blood.* **102**:906.