

## BMP-2 Protein, Human, Mouse, Rat, Rhesus, Canine, Recombinant

### General Information

Synonyms:	bone morphogenetic protein 2
Protein Construction:	A DNA sequence encoding the mature form of human / mouse / rat / rhesus / canine BMP2 (NP_001191.1) (Gln283-Arg396) was expressed with an initial Met. The mature form sequences of human, mouse, rat, rhesus and canine BMP2 are identical. Predicted N terminal: Met
Species:	Human,Mouse,Rat,Rhesus,Canine
Expression Host:	E. coli
Accession:	P12643
Molecular Weight:	13 kDa (predicted); 14 & 27 kDa (reducing conditions)

### QC Testing

Biological Activity:	Measured by its ability to induce alkaline phosphatase production by MC3T3-E1 mouse osteoblastic cells. The ED50 for this effect is typically 0.1-0.5 µg/mL.
Purity:	> 95% as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 30% ACN, 1% TFA. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

BMP-2 protein, like other bone morphogenetic proteins, plays an important role in the development of bone and cartilage. BMP-2 protein is involved in the hedgehog pathway, TGF beta signaling pathway, and cytokine-cytokine receptor interaction. BMP-2 and BMP-7 are osteogenic BMPs that have been demonstrated to potently induce

osteoblast differentiation in a variety of cell types. BMP-2, BMP-4 and BMP-7 are known to be of major importance in bone formation and repair. In cancerous tissues BMP-2 protein may play an important role in the progression of glioma.

### Reference

Jiao X, et al. (2007) Heparan sulfate proteoglycans (HSPGs) modulate BMP-2 osteogenic bioactivity in C2C12 cells. J Biol Chem. 282(2):1080-6.

Michon F, et al. (2008) BMP-2 and BMP-7 play antagonistic roles in feather induction. Development 135 (16):2797-805.

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