

Human BMP-2

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For Research Use Only. Not For Use In Diagnostic Procedures.

Molecular Wt.	Source	Purity
26 kDa	Human Recombinant Protein Expressed in <i>E. Coli</i> .	>95%

Background: Bone morphogenetic proteins (BMPs) were first identified as molecules that can induce ectopic bone and cartilage formation (1,2). BMPs are synthesized as precursor proteins that are processed by cleavage to produce mature proteins. BMPs initiate signaling by binding to a receptor complex containing type I and type II serine/threonine receptor kinases that then phosphorylate Smad (mainly Smad1, 5 and 8), resulting in the translocation of Smad to the nucleus. BMP was also reported to activate MAPK pathways in some systems (3,4).

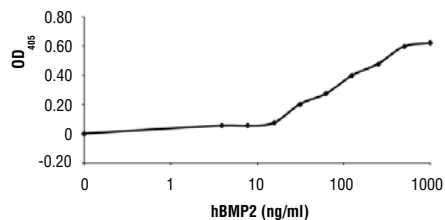
Background References:

- (1) Wang, E.A. et al. (1988) *Proc Natl Acad Sci USA* 85, 9484–8.
- (2) Wozney, J.M. et al. (1988) *Science* 242, 1528–34.
- (3) Kawabata, M. et al. (1998) *Cytokine Growth Factor Rev* 9, 49–61.
- (4) Nohe, A. et al. (2004) *Cell Signal* 16, 291–9.

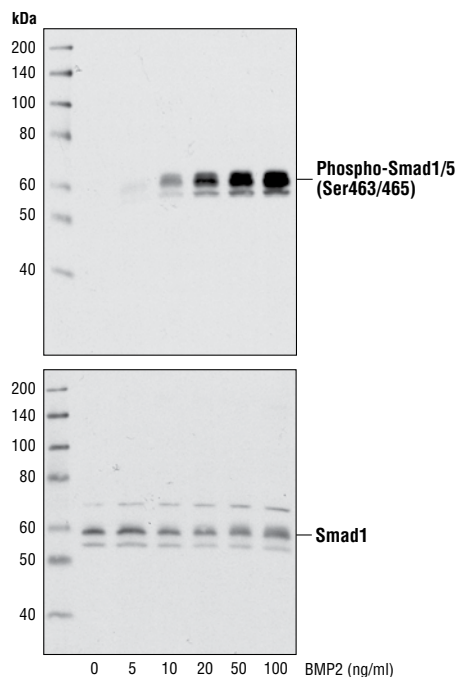
Source/Purification: Recombinant human BMP-2 was prepared in *E. coli* and is supplied in a lyophilized form. A greater than 95% purity was determined by SDS-PAGE. Endotoxin levels are less than or equal to 1 EU/1µg hBMP-2.

Directions for Use: Working concentration of hBMP-2 generally ranges from 20–50 ng/ml.

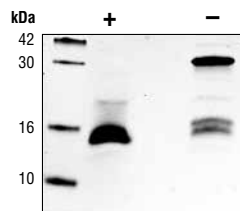
Activity: The bioactivity of recombinant hBMP-2 was determined by the alkaline phosphatase activity in ATDC-5 cells. The ED₅₀ of each lot is between 10–250 ng/ml.



ATDC-5 cells were cultured with 0 to 1000 ng/mL of hBMP-2. Alkaline phosphatase activity was measured after 67 hours by measuring the OD₄₀₅.



Western blot analysis of extracts from serum-starved HT-1080 cells, untreated and treated for 30 minutes with various concentrations of Human BMP-2, using Phospho-Smad1/5 (Ser463/465) (41D10) Rabbit mAb #9516 (upper) and Smad1 Antibody #9743 (lower).



The purity of recombinant hBMP-2 was determined by SDS-PAGE of 1 µg reduced (+) and non-reduced (-) recombinant hBMP-2 and staining overnight with Coomassie Blue.

Storage: Recombinant human BMP-2 is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/ml, which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long-term storage.