

Active Recombinant Human BMP6

Cat. No. BMP6-68H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human bone morphogenetic protein 6 (Gln382-His513) was expressed in NSO Cells.
Species	Human
Source	Mammalian Cells
ProteinLength	382-513 a.a.
Description	Bone Morphogenetic Protein 6 (BMP-6), also known as Vgr-1, is one of at least 15 structurally and functionally related BMPs which are members of the transforming growth factor β (TGF-β) superfamily. Human BMP-6 is synthesized as a 513 amino acid (aa) precursor protein that is cleaved at the dibasic cleavage site (RxxR) to release the 18 kDa C-terminal mature protein. Biologically active BMP -6 consists of a disulfide-linked homodimer of the mature proteins. Mature human BMP-6 shares 96% and 98% aa sequence identity with mouse and rat BMP-6, respectively. Cellular responses to BMP-6 are mediated by hetero-oligomeric complexes of type I (Activin RIA/ALK -2 and BMPR-IA/ALK-3) and type II (Activin RIIA and BMPR-II) serine/threonine kinase receptors. Glycosylation of BMP-6 is required for its interaction with Activin RIA. BMP6 induces the expression of Noggin and is subsequently antagonized by Noggin. BMP-6 induces a wide range of cellular responses. It promotes osteoblast differentiation from mesenchymal stem cells, chondrocyte maturation (9), Ang II-induced aldosterone production in the adrenal cortex, hormone production and responsiveness in ovarian granulosa cells, iNOS and

 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

TNF- α production in macrophages, the cell death of B cells, and neurite outgrowth. BMP-6 expression is induced in astrocytes surrounding sites of brain injury where it functions as a neuroprotectant. BMP-6 is up-regulated during prostate cancer progression and promotes tumor cell metastasis to bone. Through interactions with the BMP coreceptor RGM-C/Hemojuvelin, BMP-6 plays an important role in iron homeostasis by promoting Hpcidin expression and preventing serum iron overload.

Sequence	Gln382-His513
SDS-PAGE	18 kDa, reducing conditions
Activity	Measured by its ability to induce alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED50 for this effect is typically 0.02-0.15 μ g/mL.
Endotoxin Level	<1.0 EU per 1 μ g of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μ m filtered solution in Acetonitrile and TFA with BSA as a carrier protein. See Certificate of Analysis for details.
Reconstitution	Reconstitute at 100 μ g/mL in sterile 4 mM HCl containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze/thaw cycles. 12 months from date of receipt, 20 to 70°C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 3 months, 20 to 70 °C under sterile conditions after reconstitution.

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GENE INFORMATION

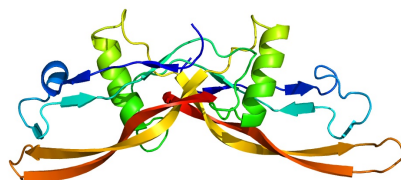
Gene Name	BMP6 bone morphogenetic protein 6 [Homo sapiens]
Official Symbol	BMP6
Synonyms	BMP6; bone morphogenetic protein 6; VGR; VG; vegetal related growth factor (TGFB-related); Bone morphogenetic protein 6; VG-1-related protein; VG-1-R; VGR-1
Gene ID	654
mRNA Refseq	NM_001718
Protein Refseq	NP_001709
MIM	112266
UniProt ID	P22004
Chromosome Location	6p24-p23
Pathway	Cytokine-cytokine receptor interaction; Hedgehog signaling pathway; TGF-beta signaling pathway.
Function	cytokine activity; growth factor activity; protein binding

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PDB 2QCW.



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