Recombinant Human BMP-7 protein(His Tag)

Catalog Number: PKSH034133

Note: *Centrifuge before opening to ensure complete recovery of vial contents.*

Description

Species	Human
Source	E.coli-derived Human BMP-7 protein Met315-His431, with an C-terminal His
Calculated MW	14.0 kDa
Observed MW	12 kDa
Accession	P18075
Bio-activity	Measure by its ability to induce alkaline phosphatase production by ATDC5 cells.The ED_{50} for this effect is <0.65 μg/mL.

Properties

Purity	> 95 % as determined by reducing SDS-PAGE.
Endotoxin	< 0.1 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80 ℃. Reconstituted protein solution can be stored at 4-8℃ for 2-7 days. Aliquots of reconstituted samples are stable at < -20℃ for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile 20 mM sodium citrate, 0.2 M NaCl, pH 3.5. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Background

BMP-7 (Bone morphogenetic protein 7), also known as osteogenic protein 1 (OP-1), is a bone morphogenetic protein which belongs to the TGF-β superfamily. OP-1 is expressed in the brain, kidneys and bladder. BMP-7 may be involved in bone homeostasis. Osteogenic protein 1 plays a key role in the transformation of mesenchymal cells into bone and cartilage. The phosphorylation of SMAD1 and SMAD5 can be induced by BMP-7, which in turn induce transcription of numerous osteogenic genes. BMP-7 treatment can also induce all of the genetic markers of osteoblast differentiation in many cell types. The expression of BMP-7 causes ventral phenotypes while its complete inhibition creates a dorsal phenotype. Human recombinant BMP-7 protein can be used to aid in the fusion of vertebral bodies to prevent neurologic trauma. It also functions in the treatment of tibial non-union, frequently in cases where a bone graft has faile d. It is found that BMP7 has the potential for treatment of chronic kidney disease.