

## PPH58

## PODS® Human BMP-7

### Description

The product contains the polyhedrin protein co-crystallized with Human BMP-7. BMP-7, also known as Bone Morphogenetic Protein 7, osteogenic protein-1 or OP-1, is a member of the TGF superfamily of proteins. Akin to the other functionally and structurally related bone morphogenetic proteins (BMPs), BMP-7 is involved in cartilage and bone formation and signals through serine/threonine kinase receptors. Additionally, BMP-7 plays a role in a variety of other organs and organ systems such as during development of the kidney and prostate. Furthermore, BMP-7 has been identified as an anti-fibrotic molecule, antagonizing TGFβ1 and the emergence of fibroblasts derived from endothelial cells in fibrosis of kidney, lung, liver, heart and peritoneum. BMP7 was also implicated in the promotion of neuroregeneration following brain ischemia. The BMP-7 protein is usually a disulfide linked homodimer and highly conserved across animal species; for example, the amino acid sequence of human, mouse and rat BMP-7 are 98% identical. However, mature BMP-7 can also form disulfide-linked heterodimers with either BMP-2 or BMP-4. These heterodimeric complexes have shown increased effects and range of activity compared to BMP-7 homodimers.

<b>Length</b>	432 aa
<b>Molecular Weight</b>	109 kDa
<b>Source</b>	<i>Spodoptera frugiperda (Sf9) cell culture</i>
<b>Accession Number</b>	P18075

### Usage Recommendation

PODS® co-crystals provide a depot of proteins which are steadily secreted. It has been estimated that the biological activity of 50 million PODS® co-crystals generates the same peak dose as 3.3 µg of standard recombinant protein. However, at 5 days following the start of seeding the PODS® co-crystals, there are more than 50% of these peak levels still present in the culture system. Ultimately, the amount of PODS® co-crystals that is optimal for a particular experiment should be determined empirically. Based on previous data, we suggest using 50 million PODS® co-crystals in place of 3.3 µg of standard growth factor as a starting point. To control for cross-reactivity with cells or as a negative control, we recommend using PODS® growth factors alongside [PODS® Empty crystals](#), as the latter do not contain or release cargo protein.

### Specifications

<b>Alternative Names</b>	BMP7, Bone Morphogenetic Protein 7, OP-1, OP1						
<b>Endotoxin Level</b>	<0.06 EU/ml as measured by gel clot LAL assay						
<b>Formulation</b>	PODS® were lyophilized from a volatile solution						
<b>AA Sequence</b>	MADVAGTSNR	DFRGREQRLF	NSEQYNYNNS	KNSRPSTSLY	KKAGFMHVRS	LRAAAPHSFV	ALWAPLFLLR
	SALADFSLDN	EVHSSFIHRR	LRSQERREMQ	REILSILGLP	HRPRPHLQ GK	HNSAPMFMLD	LYNAMAVEEG
	GGPGGQGFYS	PYKAVFSTQG	PPLASLQDSH	FLTDADMVMS	FVNLVEHDKE	FFHPRYHHRE	FRFDLSKIPE
	GEAVTAAEFR	IYKDYIRERF	DNETFRISVY	QVLQEHLGRE	SDLFLLDSRT	LWASEEGWL V	FDITATSNHW
	VVNPRHNLGL	QLSVETLDGQ	SINPKLAGLI	GRHGPNKQKP	FMVAFFKATE	VHFRSIRSTG	SKQRSQNRSK
	TPKNQEALRM	ANVAENSSSD	QRQACKKHEL	YVSFRDLGWQ	DWIIAPEGYA	AYYCEGECAF	PLNSYMNATN
	HAIVQTLVHF	INPETVPKPC	CAPTQLNAIS	VLYFDDSSNV	ILKKYRNMVV	RACGCH*	

## Preparation and Storage

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**Reconstitution** PODS® co-crystals may be reconstituted at 200 million co-crystals/ml in sterile PBS. 20% glucose has a buoyant density closer to PODS® co-crystals and can be useful for aliquoting. PODS® co-crystals are highly stable when stored in aqueous solution (pH range 6 - 8).

**Stability and Storage** Upon receipt, store at 4°C. PODS® co-crystals are stable for at least 1 year when dry and 6 months when resuspended.