



User Manual

Bone Morphogenetic Protein-4 (BMP-4) (Human)

Cat. No. HEOPP-02091



Description:

Human Bone Morphogenetic Protein-4 (BMP-4) is one of at least 15 structurally and functionally related BMPs, which are members of the transforming growth factor β (TGF- β) superfamily. BMPs were originally identified as protein regulators of cartilage and bone formation. However, they have since been shown to be involved in embryogenesis and morphogenesis of various tissues and organs. BMPs have also been shown to regulate the growth, differentiation, chemotaxis and apoptosis of various cell types, including mesenchymal cells, epithelial cells, hematopoietic cells and neuronal cells. BMP-4 is synthesized as large precursor molecules which are cleaved by proteolytic enzymes. The active form can consist of a dimer of two identical proteins or a heterodimer of two related bone morphogenetic proteins.

Source:

Escherichia coli

Unit:

2 μ g

Reconstitution:

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $< -20^{\circ}\text{C}$. Further dilutions should be made in appropriate buffered solutions.

Formulation:

Lyophilized from a 0.2 μ m filtered concentrated solution in 50 mM Na_2CO_3 , 5 mM DTT, pH 11.0.

Storage:

This lyophilized preparation is stable at 2-8 $^{\circ}\text{C}$, but should be kept at -20 $^{\circ}\text{C}$ for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8 $^{\circ}\text{C}$. For maximal stability, apportion the reconstituted preparation into working

aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

Molecular Weight:

Approximately 13.0 kDa, a monomeric, non-glycosylated polypeptide chain containing 117 amino acids.

Endotoxin:

Less than 1 EU/μg of BMP-4 as determined by LAL method.

Usage:

This material is offered by Cyagen Biosciences for research, laboratory or further evaluation purposes. FOR RESEARCH USE ONLY. NOT INTENDED FOR ANY ANIMAL OR HUMAN THERAP EUTIC OR DIAGNOSTIC USE.

Biological Activity:

The ED50 determined by inducing alkaline phosphatase production of murine ATDC5 cells is less than 30 ng/mL, correspond-ing to a specific activity of $> 3.3 \times 10^4$ IU/mg.

Physical Appearance:

Sterile filtered white lyophilized (freeze-dried) powder.

AA Sequence:

MSPKHHSQRAR KKNKNCRRHS LYVDFSDVGW NDWIVAPPGY QAFYCHGDCP
FPLADHLNST NHAIVQTLVN SVNSSIPKAC CVPTELSAIS MLYLDEYDKV
VLKNYQEMVV EGCGCR

Application:

1. Molecular standard (Western, ELISA) in studying secreted BMP-4; 2. Preparing antibodies for BMP-4 monomer; 3. Molecule standard in detecting secreted BMP-4 in reduced SDS-PAGE.

Purity:

> 95% by SDS-PAGE and HPLC analyses.

Material Safety Data Sheets (MSDSs) are available upon request.

The Certificate of Analysis (COA), which provides detailed quality control information for each product, is also available at the Cyagen website.

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