

Recombinant Human Mature BMP-10 Protein

Catalog No.: RP00771

Sequence Information

Species **Gene ID**
Human 27302

Swiss Prot **Tags**
O95393 NO-Tag

Synonyms

BMP10, Bone morphogenetic protein 10, BMP-10

Product Information

Source **Purification**
HEK293 cells ≥ 90% as determined by reducing SDS-PAGE.

Calculated MW **Observed MW**
12.16 kDa 10-20 kDa

Endotoxin

< 1 EU/μg of the protein by LAL method.

Formulation

Lyophilized from 0.22 μm filtered solution in 4mM HCl.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

Background

BMP-10 is critical for the proper development of the heart but is not expressed until after cardiac patterning or looping are completed. BMP-10 production appears at the onset of trabeculation and chamber formation and is restricted to the right atrium in the adult heart. Homozygous BMP-10 knockout mice die in utero due to arrested cardiac development. BMP-10 is required for the expression of the cardiogenic transcription factors NKX2.5 and MEF2C in developing myocardium and the growth of embryonic cardiomyocytes. NKX2.5 itself negatively regulates BMP-10 expression in cardiac myocytes. Multiple human congenital heart defects result from mutations in NKX2.5 and require BMP-10 expression. In mice, genetic knockout of ErbB leads to a similar phenotype but appears not to involve BMP-10, and knockout of the calcium channel subunit FKBP12 induces BMP-10 over-expression. BMP-10 in the postnatal heart promotes increased cardiomyocyte and heart size. BMP-10 has been shown to signal through ALK-1, BMPR-IA, BMPR-IB, and BMPR-II in transfectants and non-cardiac cell lines. A functional BMP-10 receptor in the heart has not yet been identified, although deletion of BMPR-IA causes similar cardiac morphogenetic abnormalities. In dermal endothelial cells, BMP-10 induces migration, proliferation, and gene expression typically associated with ALK-1.

Basic Information

Description

Recombinant Human Mature BMP-10 Protein is produced by HEK293 cells system. The target protein is expressed with sequence (Ser22-Arg424) of Human Mature BMP-10 (Accession #NP_055297.1) fused with No Tag.

Activity

Measured by its ability to induce alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED₅₀ for this effect is 3.76-15.06 ng/mL, corresponding to a specific activity of 6.64×10⁴~2.66×10⁵ units/mg.

Shipping

Lyophilized proteins are shipped at ambient temperature.
Liquid proteins are shipped at frozen temperature with dry ice.
Upon receipt, store it immediately at the temperature recommended below.

Storage

Store at -20°C

Operational Notes

For your safety and health, please wear a lab coat and disposable gloves for handling.

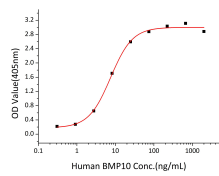
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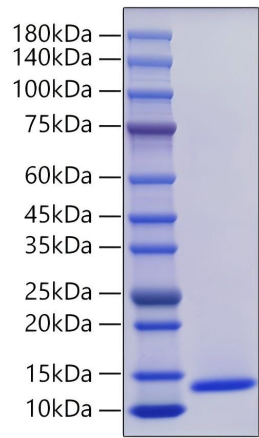
✉ | cn.market@abclonal.com.cn

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Validation Data



Measured by its ability to induce alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED_{50} for this effect is 3.76–15.06 ng/mL, corresponding to a specific activity of $6.64 \times 10^4 \sim 2.66 \times 10^5$ units/mg.



Recombinant Human Mature BMP-10 Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.