

# Recombinant Human GDF5/BMP-14 Protein

Catalog Number:PKSH033660



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

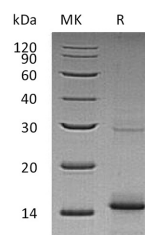
## Description

|                                    |   |
|------------------------------------|---|
| <b>Synonyms</b>                    | Growth/differentiation factor 5;GDF-5;Bone morphogenetic protein 14;BMP-14;Cartilage-derived morphogenetic protein 1;CDMP-1;Lipopolysaccharide-associated protein 4;LAP-4;LPS-associated protein 4;Radotermin;CDMP1 |
| <b>Species</b>                     | Human   |
| <b>Expression Host</b>             | E.coli  |
| <b>Sequence</b>                    | Ala382-Arg501   |
| <b>Accession</b>                   | P43026  |
| <b>Calculated Molecular Weight</b> | 14.5 kDa  |
| <b>Observed molecular weight</b>   | 18 kDa  |
| <b>Tag</b>                         | C-His   |
| <b>Bioactivity</b>                 | Measure by its ability to induce alkaline phosphatase production by ATDC5 cells.The ED <sub>50</sub> for this effect is < 14 ng/mL.   |

## Properties

|                       |  |
|-----------------------|--|
| <b>Purity</b>         | > 98 % as determined by reducing SDS-PAGE.   |
| <b>Endotoxin</b>      | < 0.1 EU per µg of the protein as determined by the LAL method.  |
| <b>Storage</b>        | Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.              |
| <b>Shipping</b>       | This product is provided as lyophilized powder which is shipped with ice packs.  |
| <b>Formulation</b>    | Lyophilized from sterile 20 mM sodium citrate, 0.2 M NaCl, pH 3.5. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual. |
| <b>Reconstitution</b> | Please refer to the printed manual for detailed information.   |

## Data



> 98 % as determined by reducing SDS-PAGE.

## Background

Growth Differentiation Factor 5(GDF-5, BMP-14) is a member of the BMP family of TGFβ superfamily proteins. Human GDF-5, -6, and -7 are a defined subgroup of the BMP family. GDF-5 is synthesized as a homodimeric precursor protein consisting of a 354 amino acid (aa) Nterminal proregion and a 120 aa C-terminal mature peptide. Mature human

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GDF-5 shares 99% aa sequence identity with both mature mouse and rat GDF-5. GDF-5 signaling is mediated by formation of a heterodimeric complex consisting of a type I (BMPR-IB) and a type II (BMPR-II or Activin RII) serine/threonine kinase receptor which results in the phosphorylation and activation of cytosolic Smad proteins (Smad1, 5, and 8). GDF-5 is involved in multiple developmental processes including limb generation, cartilage development, joint formation, bone morphogenesis, cell survival, and neuritogenesis. Inhibition of GDF-5 expression or alteration of its signaling can facilitate the development of osteoarthritis.

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