

## Recombinant Human GDF5/BMP-14 Protein

**Catalog No.** PKSH033660

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

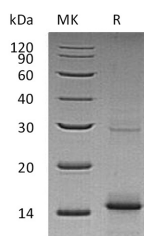
### Description

<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;Radotermis;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.

### For Research Use Only

## Background

Growth Differentiation Factor 5 (GDF-5, BMP-14) is a member of the BMP family of TGF $\beta$  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) N-terminal proregion and a 120 aa C-terminal mature peptide. Mature human 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 (BMPRII) and a type II (BMPRI 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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