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Recombinant human GDF-5 protein (Qk070)



Type: Stem cells

Available for purchase: Unit Size (µg): 25, 50, 100, 500, 1000

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Product Information

Growth differentiation factor 5 (GDF-5) plays a crucial role during embryonic development and tissue homeostasis and is specifically involved in the development of the skeletal system. Recombinant human GDF-5 protein is commonly used for the differentiation and maintenance of induced pluripotent stem cells, embryonic stem cells, or bone marrow-derived mesenchymal stem cells into osteoblasts and chondrocytes.

Human GDF-5 is a dimer with a molecular weight of 27 kDa. This protein is animal origin-free, carrier protein-free, and tag- free with exceptional lot-to-lot consistency. GDF-5 is suitable for reproducible and high-quality chondrocytes and osteoblasts.

This protein is also available as GMP compliant Cell Therapy Grade, to enquire email support@qkine.com.

Alternative protein names

Bone morphogenetic protein 14 (BMP-14), Cartilage-derived morphogenetic protein 1 (CDMP-1), Lipopolysaccharide-associated protein 4 (LAP-4; LPS-associated protein 4), Radotermin, GDF5, GDF 5, growth differentiation factor 5, Qk70

Molecular weight

27 kDa (monomer)

Protein Uniprot number

High-purity human GDF-5 (UniProt number: P43026)

Species reactivity

- human
- species similarity:
- mouse - 99%
- rat - 98%

Product Information

- >98%, by SDS-PAGE quantitative densitometry
- Expressed in *E. coli*
- Animal origin-free (AOF) and carrier protein-free
- Manufactured in our Cambridge, UK laboratories
- Lyophilized from acetonitrile, TFA

Reconstitution instructions

- Resuspend in 10 mM HCl (Reconstitution solution A) at >50 µg/ml

Featured applications

- Directed chondrogenic differentiation of mesenchymal stem cells
- Generation of iPSC-derived osteoblasts and chondrocytes
- Mesenchymal stem cell research
- Differentiation of adipose-derived stromal cells to osteogenic lineages

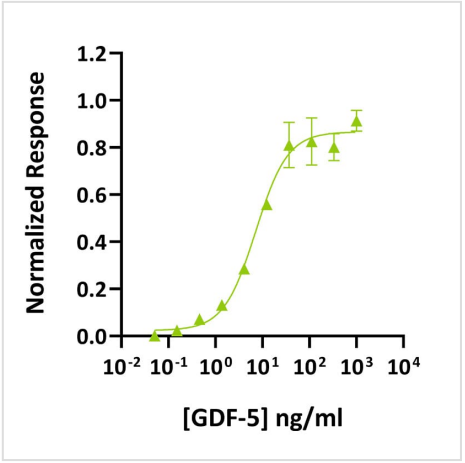
Further quality assays

- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

Scientific Information

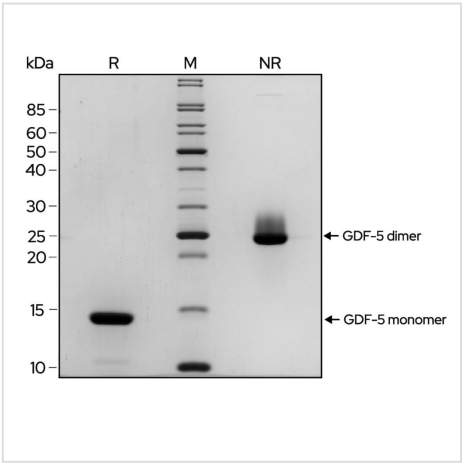
Bioactivity

GDF-5 activity was determined using the GDF-5-responsive firefly luciferase reporter assay. Transfected HEK293T cells were treated in triplicate with a serial dilution of GDF-5 for 24 hours. Firefly luciferase activity was measured and normalised to the control Renilla luciferase activity. Data from Qk070 lot #204571. EC50 = 7.2 ng/mL (0.53 nM).



Purity

Recombinant GDF-5 migrates as a major band at approximately 27 kDa in non-reduced conditions (NR). Upon reduction (R), only the monomer band at approximately 13.5 kDa is visible. No contaminating protein bands are present. The purified recombinant protein (3 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced (NR) conditions and stained with Coomassie Brilliant Blue R250. Data from Qk070 batch #204571.



Original product page: https://qkine.com/product/recombinant-human-gdf-5-protein-qk070/

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