Technical Data Sheet

Recombinant human/mouse GDF-5 protein

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Lot Specific Information

Lot Number: **Lot Specific***

Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Information

Catalog Number:	**RP077**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported 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
Formulation:	Lyophilized, white powder
Endotoxin:	≤2 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in 10 mM HCl (Reconstitution Buffer A) at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	27 kDa (monomer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human/mouse GDF-5 protein (growth differentiation factor 5), also known as bone morphogenetic protein 14 (BMP-14), is a member of the transforming growth factor beta (TGF-β) superfamily with a conserved signal peptide, prodomain and mature domain containing a cysteine knot formed by six conserved cysteines. GDF-5 binds type I and type II serine/threonine kinase receptors to activate Smad-dependent and Smad-independent (MAPK, PI3K and Wnt/β-catenin) pathways, regulating development, growth and survival. During embryonic development and tissue homeostasis, GDF-5 promotes formation and maintenance of bones and joints and regulates osteoblast and chondrocyte proliferation and differentiation. Loss-of-function GDF-5 mutations are linked to Hunter-Thompson syndrome, brachydactyly type C and DuPan syndrome, and polymorphisms to increased osteoarthritis risk. In cell culture, recombinant GDF-5 is used for differentiation and maintenance of induced pluripotent, embryonic and bone marrow-derived mesenchymal stem cells, promotes osteoblast and chondrocyte differentiation with BMP-4, and stimulates osteogenic differentiation of adipose-derived stromal cells with TGF-β1, making it a key reagent for bone and joint regeneration research. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. A GMP-grade version of this protein is available for cell and gene therapy manufacturing. Contact us at customerservice@bioxcell.com for details. Species reactivity: human. Species similarity: mouse - 99%, rat - 98%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**
It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out

of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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