Technical Data Sheet

Recombinant human/mouse FGF2-G3 (145 aa) 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:	**RP066**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Induced pluripotent stem cell culture and maintenance
Formulation:	Lyophilized, white powder
Endotoxin:	≤2 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in sterile-filtered water 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:	16 kDa
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human/mouse FGF2-G3 (145 aa) protein, also known as FGF2-STAB®, is a thermostable engineered form of FGF-2 (basic FGF, bFGF), the essential growth factor for maintaining human embryonic stem cell (hESC) and induced pluripotent stem cell (iPSC) pluripotency in feeder-free, chemically defined media such as mTeSR, StemPro and E8. Wild-type FGF-2 is inherently unstable, prone to proteolytic degradation and aggregation and has a half-life of less than 10 h in culture, contributing to frequent media changes and poor homogeneity during expansion and differentiation. Using computer-assisted engineering, Dvorak and colleagues at Masaryk University identified nine stabilizing substitutions that preserve the FGFR1 and FGFR2 binding sites; whereas wild-type FGF-2 loses over 50% of its activity after 10 h in conditioned media, FGF2-G3 shows no loss of activity after more than 7 days at 37 °C, while maintaining hESC pluripotency and Oct-4 and nanog expression with equivalent efficacy. FGF2-G3 is used in B8 medium, the low-cost, weekend-free iPSC protocol published by Paul Burridge and colleagues, and in emerging cultured meat applications, and this His tag-free protein avoids tag-related issues in clinical translation and scale-up, making it a gold-standard reagent for stem cell culture media. 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/mouse. Species similarity: rat - 100%, bovine - 100%, porcine - 100%.

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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