# Technical Data Sheet

## Recombinant human/mouse FGF2-G3 (154 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

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|---|---|
| **Catalog Number:** | **RP067** |
| **Protein Identity:** | Confirmed identity with expected mass, determined by mass spectrometry |
| **Reported Applications:** | Expansion of induced pluripotent, embryonic and mesenchymal stem cells |
| **Formulation:** | Lyophilized, white powder |
| **Endotoxin:** | ≤30.2 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:** | 17 kDa |
| **Bioactivity Assay:** | No significant difference between EC50 of reference and test lots |
| **Mycoplasma:** | Negative |

## Description

Recombinant human/mouse FGF2-G3 (154 aa) protein, also known as thermostable FGF-2 or FGF2-STAB®, is an engineered form of basic fibroblast growth factor (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 prone to proteolytic degradation and aggregation, with a half-life in culture media of less than 10 hours, driving frequent media changes and heterogeneity during proliferation and differentiation. Engineered using computer-assisted protein design, FGF2-G3 carries nine stabilizing amino acid substitutions designed to preserve the FGFR1 and FGFR2 binding sites, and it shows no loss of biological activity after more than 7 days in conditioned media at 37 °C, compared with less than 50% activity for wild-type FGF-2 after 10 hours, while maintaining Oct-4 and nanog expression with equivalent efficacy. FGF2-G3 is the thermostable FGF-2 used in B8 iPSC maintenance media, enabling lower media cost and weekend-free culture, and this His-tag-free protein supports translation and scale-up, making it a key reagent for stem cell culture, regenerative medicine and cultured meat applications. 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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