FGF2-G3 (human) Growth Factor USER GUIDE

Animal-free, thermostable, purified human fibroblast growth factor 2
Liquid: Catalog # LSR-101-10-L, LSR-101-50-L, LSR-101-100-L, LSR-101-1MG-L
Powder: Catalog # LSR-101-10-P, LSR-101-50-P, LSR-101-100-P, LSR-101-1MG-P

Product Description

Defined Bioscience's FGF2-G3 is a thermostabilized growth factor that offers a novel way to grow FGF2-dependent cell cultures more efficiently, with fewer medium changes. FGF2-G3 retains full biological activity even after three weeks at 37°C. The stable level of FGF2 in culture allows for a more homogeneous, undifferentiated stem cell culture, while saving researchers valuable time and money, as repeated supplementation of FGF2 and daily medium changes are not required.

FGF2-G3 is recombinantly expressed in *E. coli* with an N-terminal hexahistidine tag, thrombin cleavage site, and T7 tag. All stocks are provided in storage buffer (10 mM Tris-HCl pH 8.0, 500 mM NaCl, 5 mM bME) at 1 mg/mL, or freeze-dried from this same format. Sample purity is >95% as confirmed by SDS-PAGE (**Figure 1**).

Contents and Storage

Content	Catalog #	Amount	Storage	Shelf life
FGF2-G3 Thermostable Growth Factor	LSR-101-10 LSR-101-50 LSR-101-100 LSR-101-1MG	1 x 10 µg 1 x 50 µg 1 x 100 µg 1 x 1 mg	Store at -20°C protected from light	1 year

Biological Activity

FGF2-G3 has an expected ED50 of less than 1 ng/mL, as determined in-house for all lots by an NIH-3T3 cell proliferation assay.

Key Characteristics

FGF2-G3 differs from the canonical wild-type sequence of FGF2 (UniProt accession P09038) at nine key residues to promote increased thermostability and function in cell culture. As opposed to the 12-hour half-life of the wild-type form at 37°C, FGF2-G3 demonstrates a half-life beyond 21 days with minimal loss of function. FGF2-G3 is required at lower levels than the wild-type form for medium formulations (including at 40 ng/mL for our pluripotency medium, HiDef-B8, compared to 100 ng/mL for the wild-type form). FGF2-G3 is critical for use in cell culture conditions greater than room temperature; and helps to eliminate the need for weekend supplementation and daily medium changes for stem cell culture.

General Use

FGF2-G3 is supplied as a 1 mg/mL solution in storage buffer or in a freeze-dried form that can be reconstituted into most standard buffer formulations as needed for downstream use. FGF2-G3 can be substituted directly for wildtype FGF2 in most applications, with dosage testing recommended for optimal performance. It is recommended to reconstitute powder FGF2-G3 to 1 mg/mL with water before use.

Figures

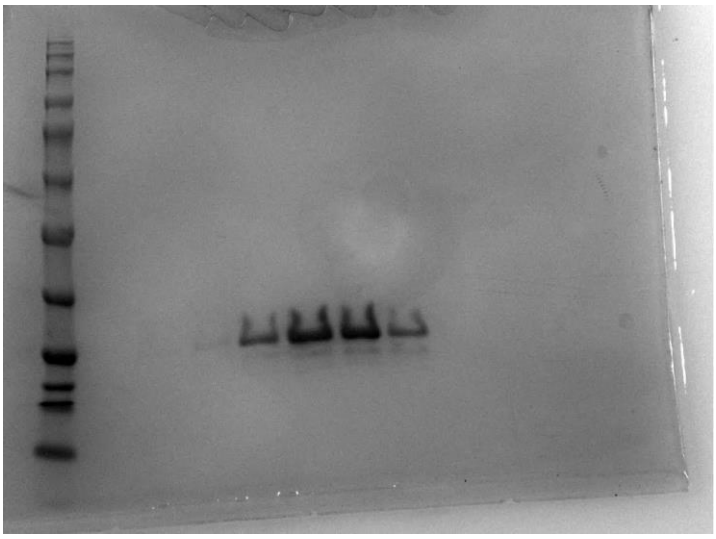

Figure 1. Representative SDS-PAGE analysis of purified FGF2-G3. Percentage purity determined by SDS-PAGE and occasionally by MS/MS analysis. Mass corresponds to the monomeric form of FGF2-G3 with associated N-terminal tags (20.9 kDa). RBG BroadRange MWL used in lane 1.

References

D. Pavel, D. Bednar, P. Vanacek, L. Balek, L. Eiselleova, V. Stepankova, E. Sebestova, M. Kunova Bosakova, Z. Konecna, S. Mazurenko. A. Kunka, T. Vanova, K. Zoufalova, R. Chaloupkova, J. Brezovsky, P. Krejci, Z. Prokop, P. Dvorak, J. Damborsky, *Biotechnology and Bioengineering* 2018, **115**, 850.

Limited Product Warranty

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