IMMOBAZYME - INSTRUCTION MANUAL

BASIC FIBROBLAST GROWTH FACTOR (HUMAN)

PRODUCT OUTLINE

PRODUCT NAME
FGF-2 (Human)

MANUFACTURER
Immobazyme (Pty) Ltd

BATCH DETAILS
CAS: 106096-93-9 | LOT: 20241018-FGF2

Product Specification & Protocol
Basic Fibroblast Growth Factor (FGF-2)

PRODUCT INFORMATION

Product Highlights

FGF-2 plays a critical role in cell culture by promoting the proliferation and differentiation of fibroblasts and other cell types. It is essential for supporting the growth of cells *in vitro*, making it a crucial component in tissue engineering, regenerative medicine, and stem cell research. Physiologically, FGF-2 enhances cell viability, stimulates angiogenesis, and accelerates wound healing processes, as demonstrated in various studies, including its ability to significantly increase the rate of fibroblast proliferation and wound closure under controlled conditions.

Available as a lyophilized powder, FGF-2 from Immobazyme provides an accessible and scalable solution for researchers and developers in cellular and molecular biology. Its high purity (>90%) and stringent quality controls make it a reliable choice for advancing innovative biological applications.

PRODUCT SPECIFICATION

For Research Use only

Grade	Food-grade, Allergen-free
Amount	100 µg per vial
Molecular Weight	74.5 kDa (with fusion protein)
Production System	*E. coli*
Protein Information	Recombinant FGF-2 is a monomeric fusion peptide with enhanced stability and solubility
Purification Method	Sequential chromatography (IMAC and desalting)
Filtration	Filtered through a 0.22 µm sterile filter
Sterility	Sterile
Mycoplasma	Absent
Form	Lyophilized powder
Purity	>90%
Reconstitution Recommendation	1 mL of sterile MilliQ water
Formulation	10 mM Na_2HPO_4, 1.8 mM KH_2PO_4, 2.7 mM KCl, 100 mM NaCl, pH 7.0, 2% Dextran T500
Storage Condition	Lyophilized sample is transported at ambient temperature. For extended shelf life, store at -20°C before and after reconstitution.

RECONSTITUTION PROTOCOL AND STORAGE

Reconstitute FGF-2

Perform reconstitution in a sterile laminar flow hood.

- Remove red safety cap from vial.
- Aspirate 1mL of sterile milliQ water into a 1mL sterile syringe.
- Attach a sterile needle onto the syringe and insert into the vial through the centre of the rubber stopper seal.
- Gently inject the 1mL of water into the vial, then remove the needle and syringe.
- Invert the vial 5-10 times, or until the lyophilised sample is fully reconstituted.
- Insert the needle and syringe into the reconstituted sample vial, invert the vial and gently aspirate the sample liquid into the 1mL syringe, being sure to collect the full volume by keeping the needle end near the rubber stopper opening.
- Inject the reconstituted 1mL sample into a sterile microfuge tube through a 0.22µm syringe filter (provided).
- Prepare stock concentrations in sterile microfuge tubes as per your relevant standard operating procedures, keeping in mind the avoidance of repeated freeze-thaw cycles.
- Prepare working concentration stocks in sterile microfuge tubes as per your relevant standard operating procedures. The recommended working concentration for FGF-2 is 1-100 ng/mL.

Storage Instructions:

- The lyophilized vial can be stored at −20 °C for 12 months.
- The reconstituted protein aliquots can be stored at −20°C for 6 months.
- Once resuspended use within 1 week (storage at 4°C).

Important Notes:

- Avoid repeated freeze-thaw cycles.

QUALITY CONTROL & PERFORMANCE TESTING

Purity Verification: SDS-PAGE and Coomassie staining

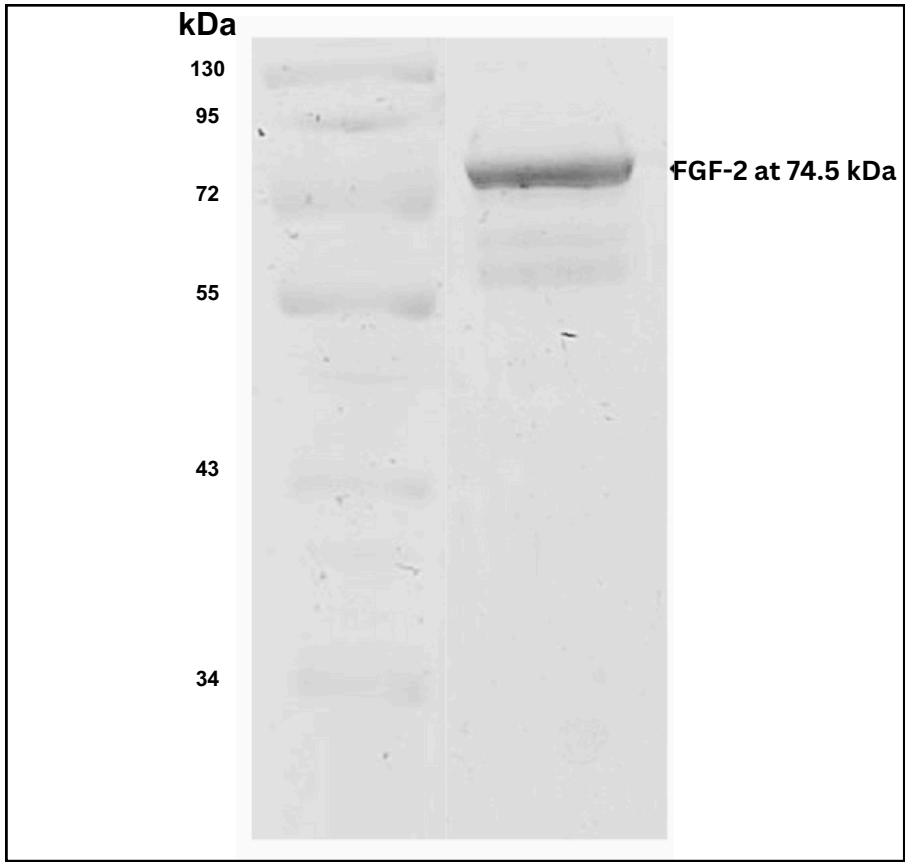

Figure 1. FGF-2 (LOT: 20241018-FGF2) run on an SDS-PAGE gel after lyophilization. A prominent band was present at ~75 kDa with ~ 90% purity.

Effect of FGF-2 (20241018-FGF2) on NIH-3T3 Cell Proliferation (T48)

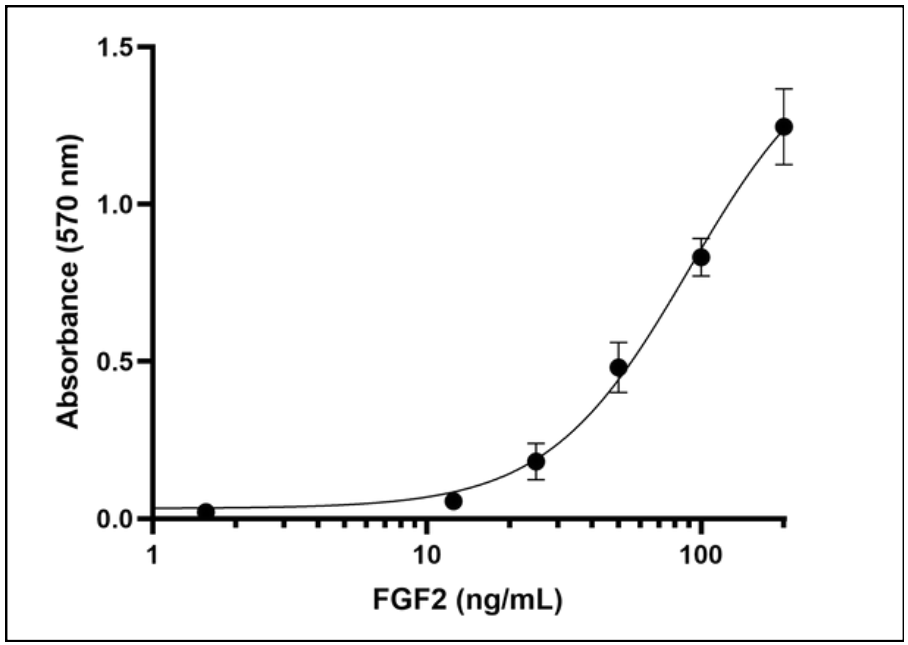

Figure 2. Effect of FGF-2 (20241018-FGF2) on NIH-3T3 fibroblast cell proliferation, tested over 48 hours.

An MTT assay graph for FGF-2 (LOT 20241018-FGF2) shows a sigmoidal dose-response curve, with cell proliferation of fibroblasts increasing as FGF-2 concentration rises. The X-axis (FGF-2 concentration, in ng/mL) is on a logarithmic scale, while the Y-axis represents cell viability or proliferation percentage, normalised to untreated controls. The EC50, where 50% of maximal proliferation is achieved, is 90.27 ng/mL. At low concentrations, proliferation remains near baseline, increases sharply around the EC50, and plateaus at higher concentrations, indicating saturation. This demonstrates the dose-dependent effectiveness of FGF-2 in stimulating cell growth.

Competitor analysis

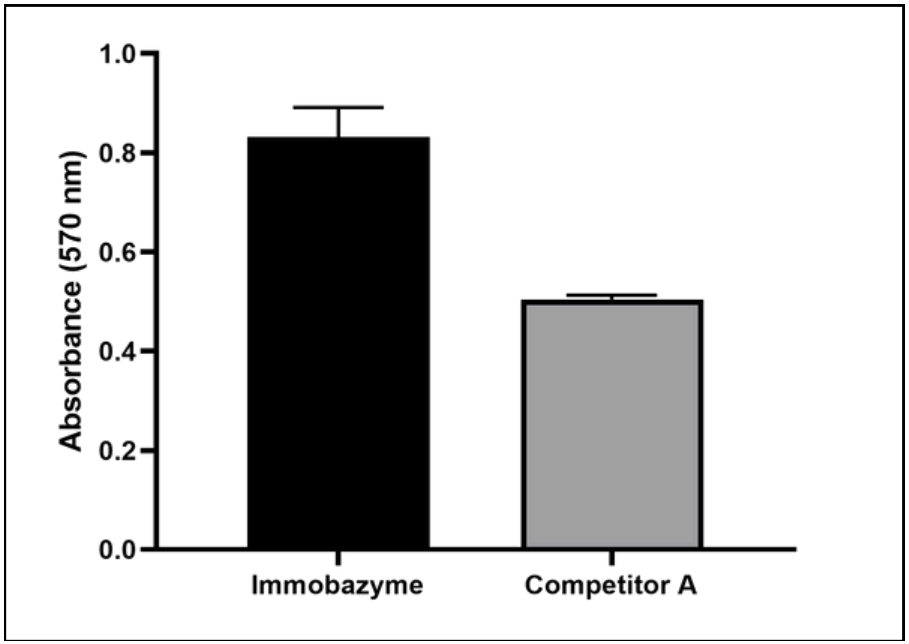

Figure 3. Effect of 100 ng/mL of FGF-2 (20241018-FGF2) on NIH-3T3 cell proliferation, tested over 48 hours.

This bar graph illustrates the effect of FGF-2 on NIH-3T3 cell proliferation measured at 48 hours (T48) using an MTT assay. The y-axis represents the absorbance at 570 nm, which is indicative of cell proliferation, while the x-axis shows the FGF-2 samples that were compared. Each sample was tested at a concentration of FGF-2 concentration of 100 ng/mL. Immobazyme's FGF-2 results in significantly higher absorbance at 570 nm compared to Competitor A, suggesting greater cell proliferation.

Sterility

Growth promotion test: Lysogeny Broth (LBL) for bacteria and Tryptic Soy Broth Agar (TSBA) plates for fungi.

	LBL	TSBA
Negative Control (Water)	-	-
Positive Control (*B. subtilis*)	+	N/A
Positive Control (*A. niger*)	N/A	+
FGF-2 Replicate 1	-	-
FGF-2 Replicate 2	-	-
FGF-2 Replicate 3	-	-

Our samples are absent of all microbial growth.

Mycoplasma

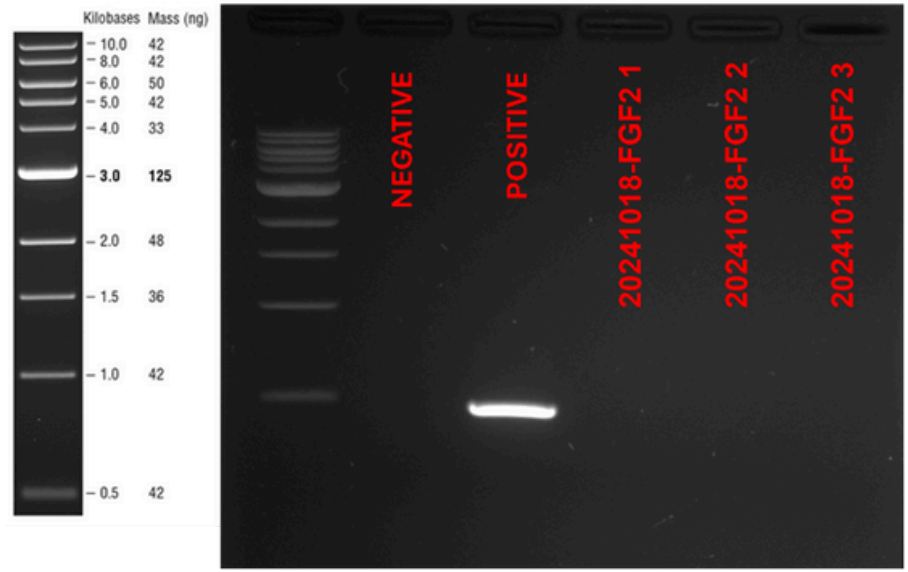

Figure 4. Mycoplasma detection via PCR on FGF-2 (LOT: 20241018-FGF2).
No amplification of the PCR product indicates that the samples are free of the mycoplasma contamination.

Observation of FGF-2 treated NIH-3T3 cells (LOT: 20241018-FGF2)

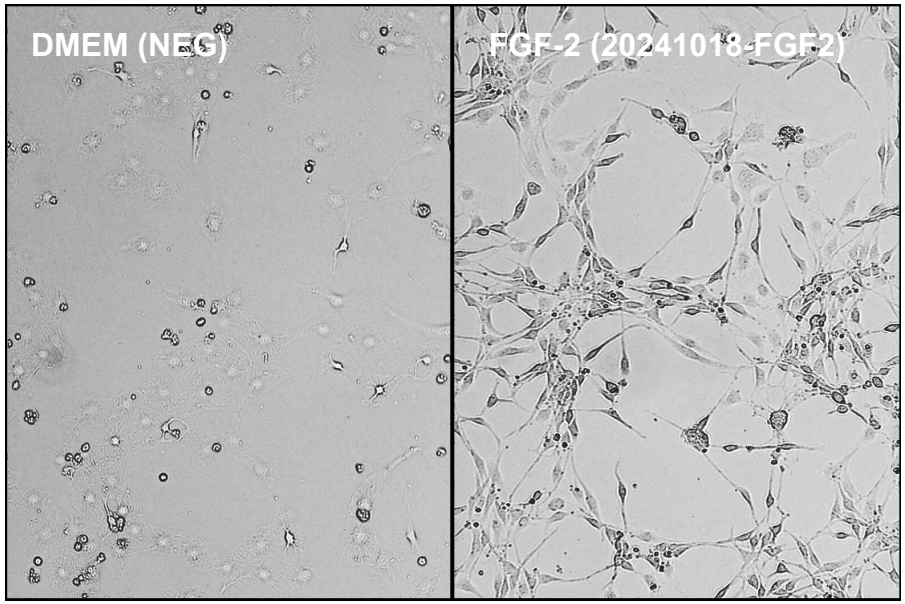

Figure 5. Microscopic observation of FGF-2 treated NIH-3T3 cells (LOT: 20241018-FGF2), after 48 hours.

FGF-2 is available for laboratory research and large-scale *in-vitro* biopharmaceutical manufacturing use only. Not for diagnostic or therapeutic use