

IMMOBAZYME - INSTRUCTION MANUAL



BASIC FIBROBLAST GROWTH FACTOR (BOVINE)

PRODUCT OUTLINE

PRODUCT NAME

FGF-2 (Bovine)

MANUFACTURER

Immobazyme (Pty) Ltd

BATCH DETAILS

CAS: 106096-93-9 | LOT: 20241213-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 | <i>E. coli</i> |
| 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 ₂ HPO ₄ , 1.8 mM KH ₂ PO 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.

1. Remove red safety cap from vial.
2. Aspirate 1mL of sterile milliQ water into a 1mL sterile syringe.
3. Attach a sterile needle onto the syringe and insert into the vial through the centre of the rubber stopper seal.
4. Gently inject the 1mL of water into the vial, then remove the needle and syringe.
5. Invert the vial 5-10 times, or until the lyophilised sample is fully reconstituted.
6. 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.
7. Inject the reconstituted 1mL sample into a sterile microfuge tube through a 0.22µm syringe filter (provided).
8. Prepare stock concentrations in sterile microfuge tubes as per your relevant standard operating procedures, keeping in mind the avoidance of repeated freeze-thaw cycles.
9. 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:

- Prepare under sterile conditions and avoid repeated freeze-thaw cycles of stock and working samples.

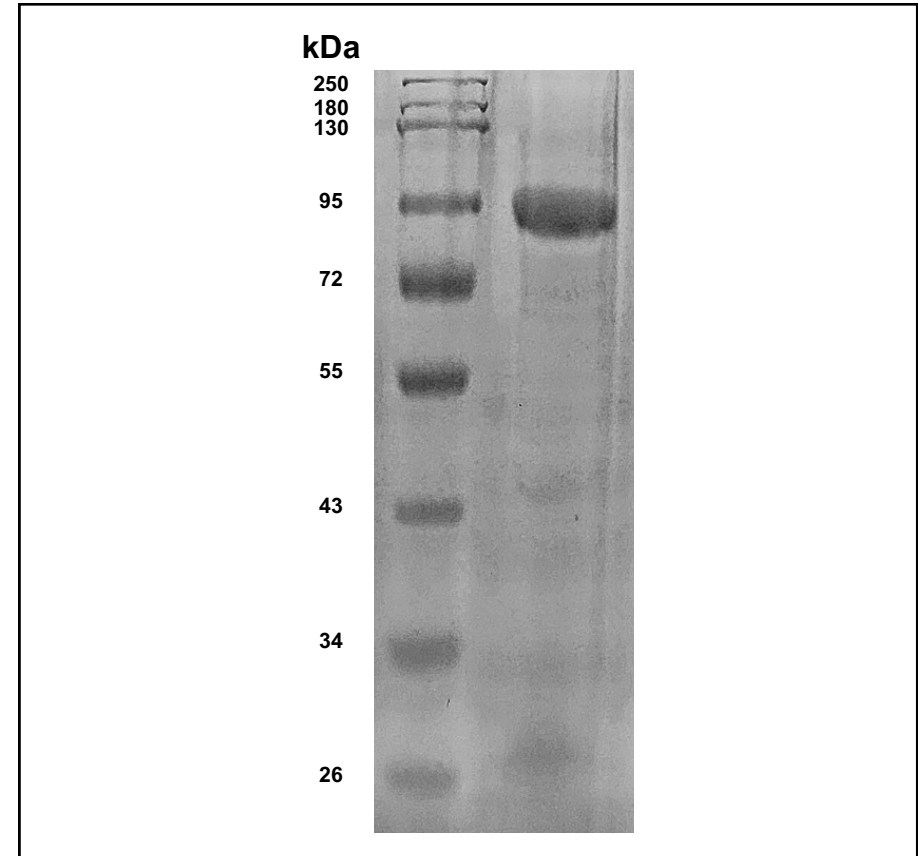
QUALITY CONTROL & PERFORMANCE TESTING**Purity Verification: SDS-PAGE and Coomassie staining**

Figure 1. FGF-2 (LOT: 20241213-FGF2) run on an SDS-PAGE gel after lyophilization. A prominent band was present at ~75 kDa with >90% purity.

Effect of FGF-2 (20241213-FGF2) on NIH-3T3 cell proliferation (T48)

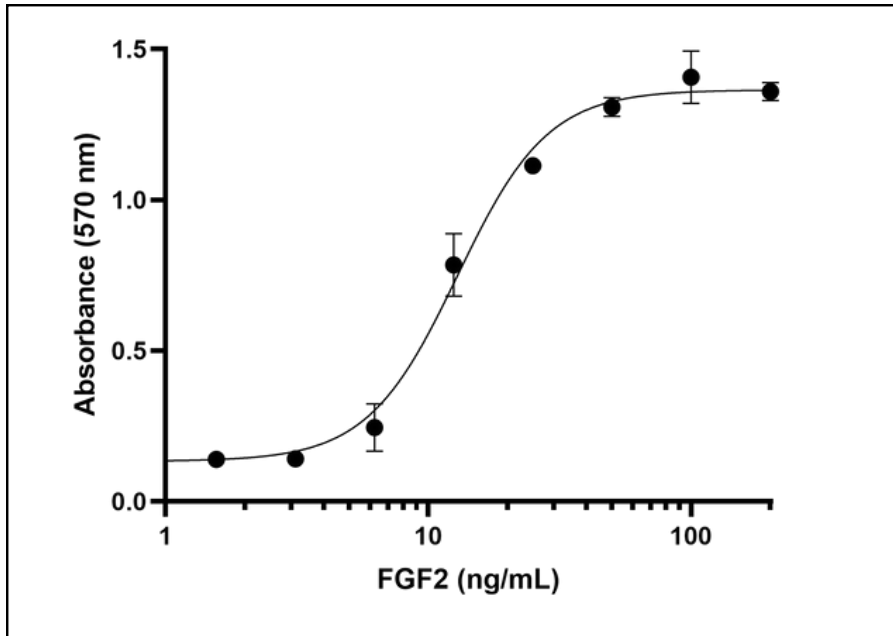


Figure 2. Effect of FGF-2 (20241213-FGF2) on NIH-3T3 fibroblast cell proliferation, tested over 48 hours.

An MTT assay graph for FGF-2 (LOT: 20241213-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. At low concentrations, proliferation remains near baseline, increases sharply around a concentration of 12.5 ng/mL and plateaus at higher concentrations, indicating saturation. This demonstrates the dose-dependent effectiveness of FGF-2 in stimulating cell growth.

Competitor analysis

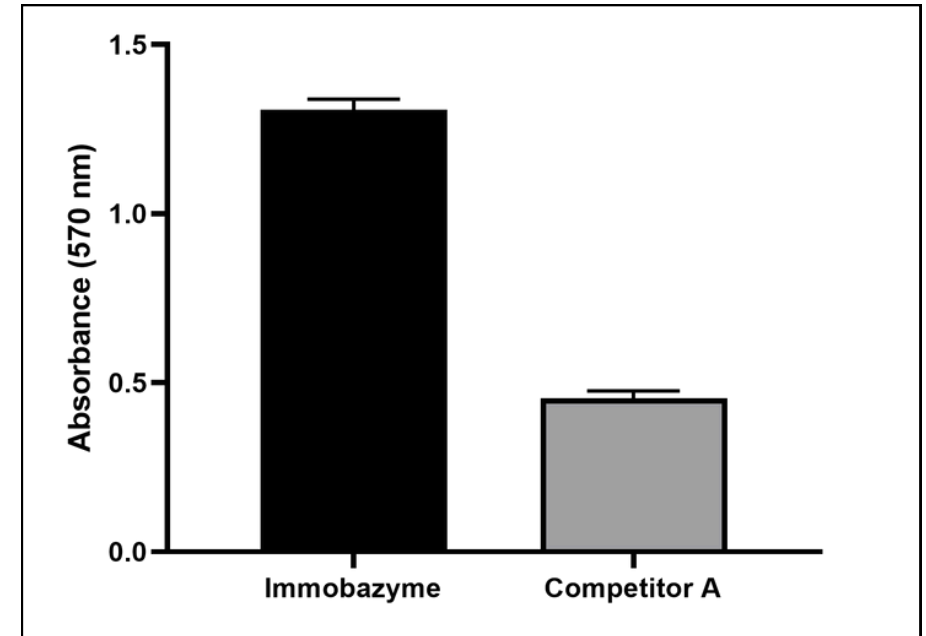


Figure 3. Effect of 50 ng/mL of FGF-2 (20241213-FGF2) on NIH-3T3 cell proliferation, tested over 48 hours

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 50 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 (<i>B. subtilis</i>) | + | N/A |
| Positive Control (<i>A. niger</i>) | N/A | + |
| FGF-2 Replicate 1 | - | - |
| FGF-2 Replicate 2 | - | - |
| FGF-2 Replicate 3 | - | - |

Our samples are absent of all microbial growth.

Mycoplasma

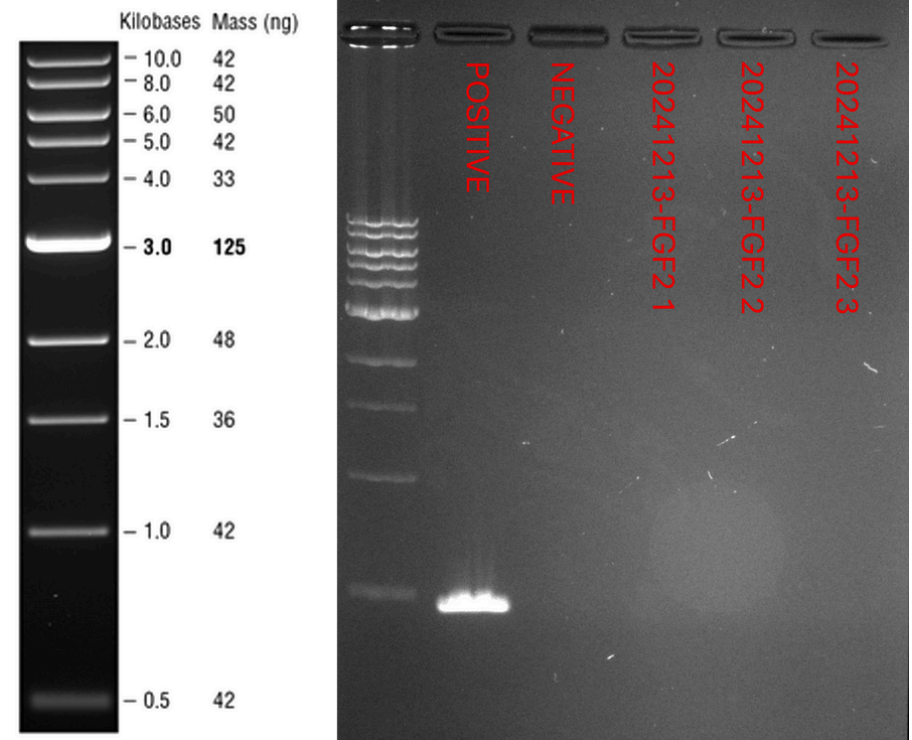


Figure 4. Mycoplasma detection via PCR on FGF-2 (LOT: 20241213-FGF2). No amplification of the PCR product indicates that the samples are free of mycoplasma contamination.

Observation of FGF-2 treated NIH-3T3 cells
(LOT: 20241213-FGF2)



Figure 5. Microscopic observation of FGF-2 treated NIH-3T3 cells (LOT: 20241213-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