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

Basic Fibroblast Growth Factor (FGF-2) is a signalling protein from the fibroblast growth factor family, which regulates essential biological processes such as cell proliferation, differentiation, migration, and angiogenesis. Additionally, FGF-2 plays a crucial role in embryonic development as well as tissue maintenance and regeneration.

Applications in cell culture, regenerative medicine, and stem cell research, FGF-2 supports cellular growth and maintenance *in vitro*.

Immobazyme's FGF-2 is produced using advanced microbial expression in *E. coli*, offering high purity (>90%), enhanced stability, and superior efficacy. Available as a lyophilised powder, our FGF-2 provides an accessible, scalable, and cost-effective solution for researchers and developers in cellular and molecular biology.

Immobazyme's FGF-2 is food-grade and allergen-free.

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	Lyophilised powder
Purity	>90%
Reconstitution Recommendation	1 mL of sterile MilliQ water
Formulation	10 mM Na^2HPO4, 1.8 mM KH^2PO4, 2.7 mM KCl, 100 mM NaCl, pH 7.0, 2% Dextran T500
Storage Condition	Lyophilised 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 1 mL of sterile milliQ water into a 1 mL 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 1 mL 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 1 mL syringe, being sure to collect the full volume by keeping the needle end near the rubber stopper opening.
7. Inject the reconstituted 1 mL sample into a sterile microfuge tube through a 0.22 µm 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 lyophilised 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

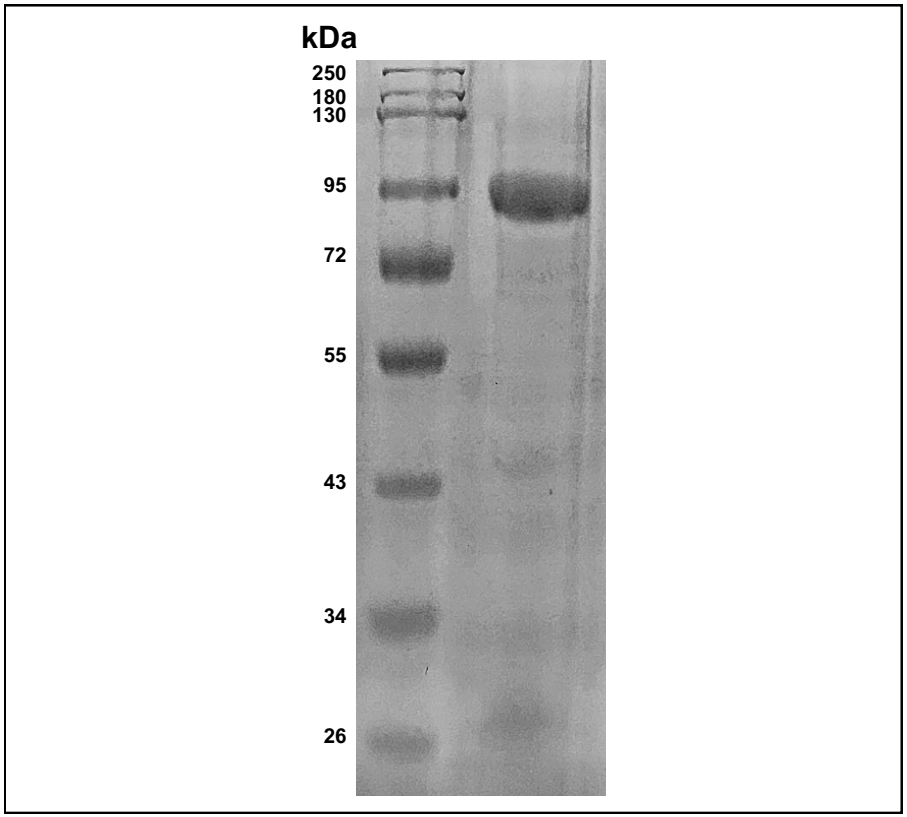

Figure 1. FGF-2 (LOT: 20241213-FGF2) run on an SDS-PAGE gel after lyophilization. A prominent band was present at ~75 kDa with >90% purity.

Effect of FGF-2 on NIH-3T3 cell proliferation

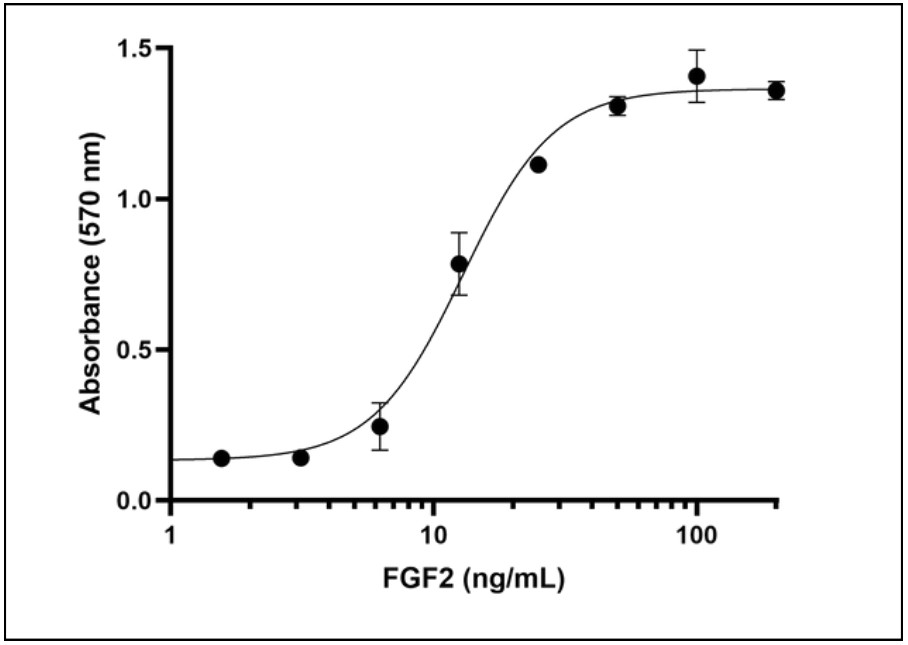

Figure 2. Effect of FGF-2 (20241213-FGF2) on NIH-3T3 fibroblast cell proliferation, tested over 48 hours.

The MTT assay graph for FGF-2 (LOT: 20241213-FGF2) exhibits a sigmoidal dose-response curve, where fibroblast proliferation increases with rising FGF-2 concentrations. The X-axis (FGF-2 concentration in ng/mL) is presented 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, then increases sharply around 12.5 ng/mL before plateauing at higher concentrations, indicating saturation. This confirms the dose-dependent effectiveness of FGF-2 in stimulating cell growth.

Competitor analysis

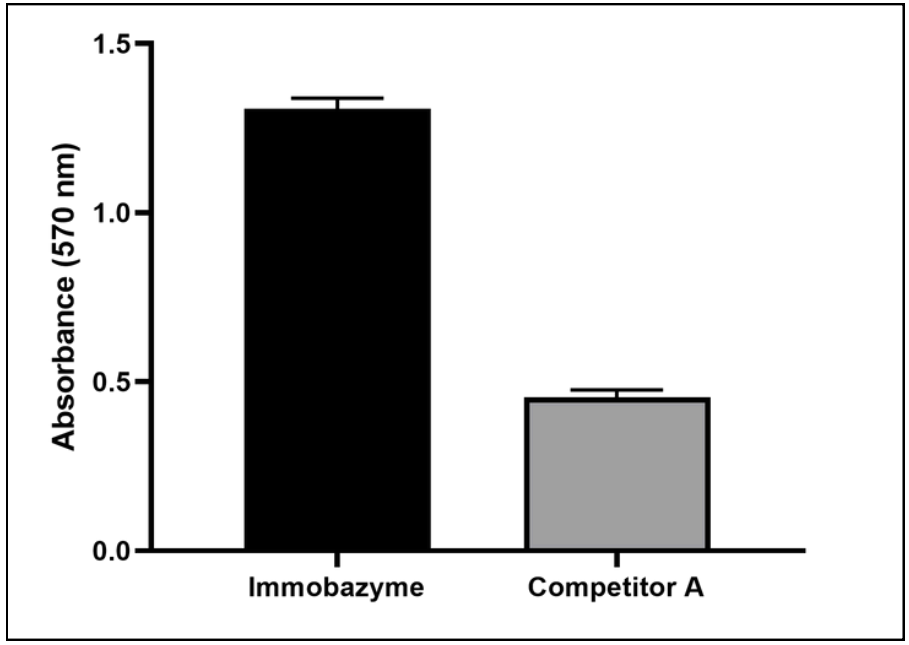

Figure 3. Effect of 50 ng/mL of FGF-2 (20241213-FGF2) on NIH-3T3 cell proliferation, tested over 48 hours

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 indicates cell proliferation, while the x-axis displays the FGF-2 samples tested. Each sample was evaluated at a concentration of 50 ng/mL. Immobazyme's FGF-2 resulted in significantly higher absorbance at 570 nm compared to Competitor A, indicating 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.

Absence of mycoplasma

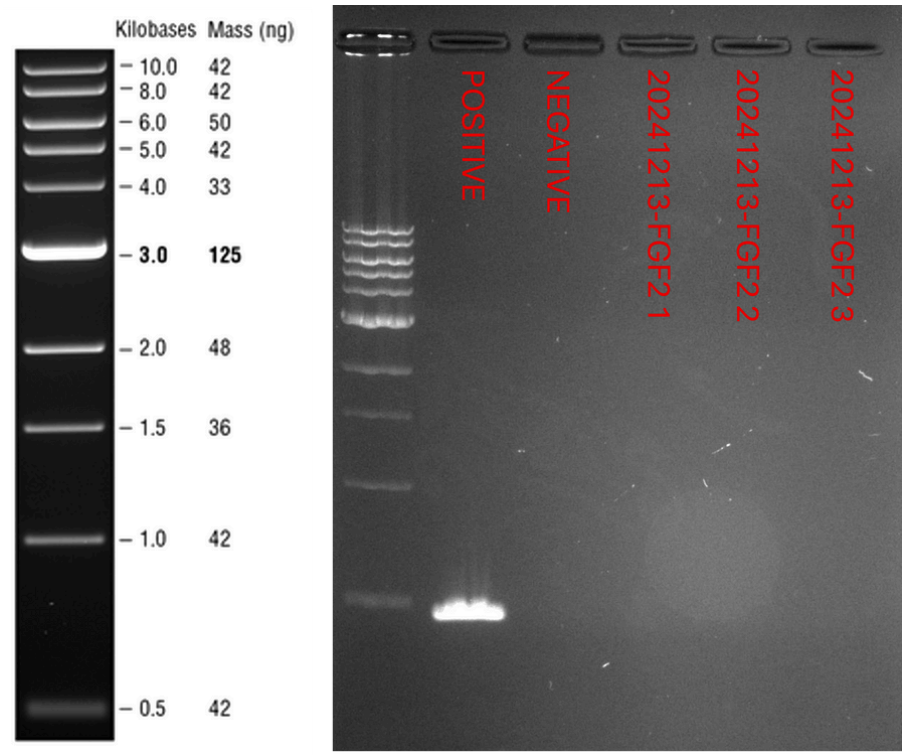

Figure 4. Mycoplasma detection via PCR on FGF-2 (LOT: 20241213-FGF2).

No amplification of the PCR product indicates that the samples are free of mycoplasma contamination.

Observation of FGF-2 treated NIH-3T3 cells

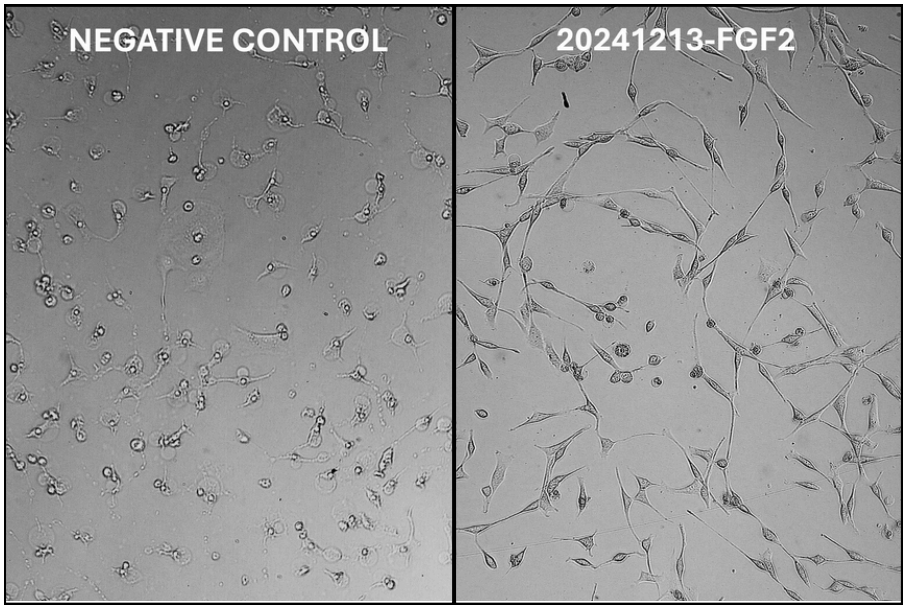

Figure 5. Microscopic observation of FGF-2 treated NIH-3T3 cells, after 48 hours.

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