

## Product specification sheet

### Proliferum<sup>®</sup> M

A critical challenge in the cell culture industry is the cost of growth media. Current solutions are not designed for the food industry. FBS is often used in cell culture but is unethically sourced and has large price and performance fluctuations. Serum-free formulations are typically expensive, do not perform well across the range of cell lines used in cultivated meat, and are not designed for scale.

Multus creates the key ingredients for companies to accelerate R&D and scale production to bring cultivated meat to market affordably and profitably. Proliferum<sup>®</sup> M is designed to grow different mammalian species' myoblasts, fibroblasts and adipocytes with the key benefits of being serum-free, adaptation-free and demonstrating high performance and versatility across cell types and scaffolding materials over multiple passages.

#### Functional Profile

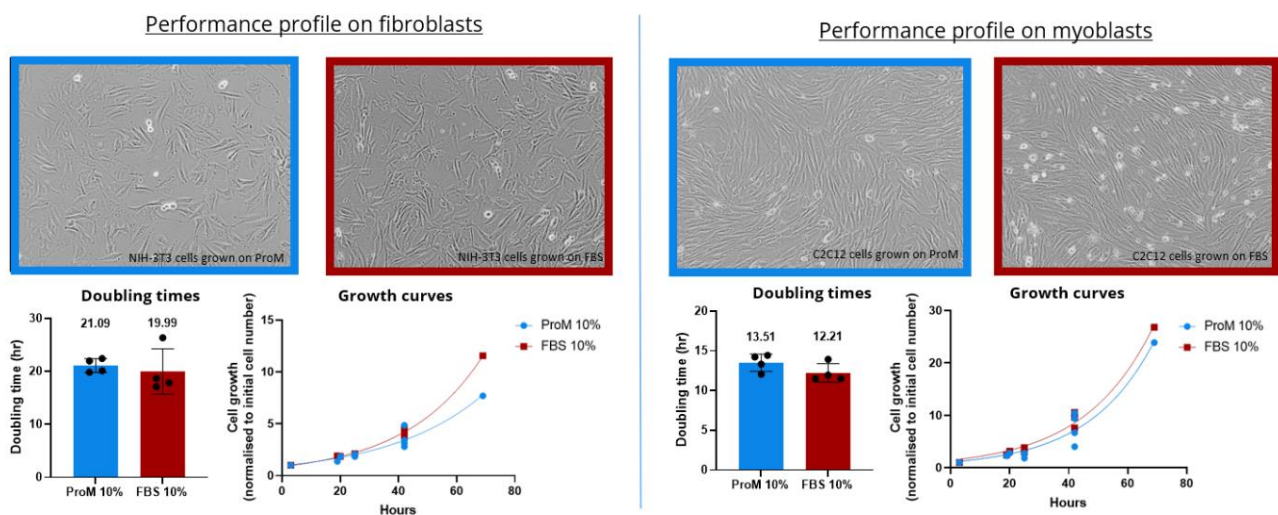


Figure 1: Comparison performance between 10% FBS and 10% Proliferum<sup>®</sup> M in DMEM/F12.

---

## Quality Controls

---

Test	Specification
pH	6 - 7.2
Osmolarity (mOsm/kg)	280 - 320
Bacteria Testing	Negative
Mycoplasma Testing	Negative
Fungal Testing	Negative
Particulate Examination	Negative
Endotoxin	< 10 EU/mL
Filtered	0.2 µm
Cell growth	Pass

---

## Storage and Handling

---

Upon arrival, store Solution 1 at +2-8°C and the incomplete Proliferum® M below -15°C.

---

## Instructions for Use

---

No adaptation required when switching from serum to Proliferum® M.

To use this product, defrost frozen incomplete Proliferum® M overnight at 2-8°C. It can be aliquoted into smaller volumes to avoid repeated freeze-thawing. Combine the incomplete Proliferum® M with Solution 1 as indicated on the label. Once combined, store at 2-8°C and use within 21 days.

For cell culturing, dissolve Proliferum® M to a final concentration of 10%\* in basal media (DMEM/F12 recommended). Prior to culturing, allow Proliferum® M to equilibrate to room temperature. Do **not** warm media at 37°C prior to use.

\*Note: if you normally use higher percentage of serum, make sure to add the same % of Proliferum® M. E.g. if you regularly culture your cells at 20% FBS, use 20% Proliferum® M as well.

When passaging the cells, make sure to **deactivate the trypsin** with trypsin inhibitor. Normally serum inhibits trypsin, but with a serum-free media, you will need to add a Defined Trypsin Inhibitor to inhibit further trypsin reaction (for example, Fisher #10703864).

**Osmolarity** of the product may change when combined with basal media. If working with cell lines that are sensitive to osmotic shock, please adjust complete media with 5M NaCl or other concentrated salt solution as necessary.

**Scaffolds** – Proliferum<sup>®</sup> M works well with a number of scaffolds, but it still requires a scaffold to support the cell attachment. Examples of tested scaffolds are shown in Figure 2.

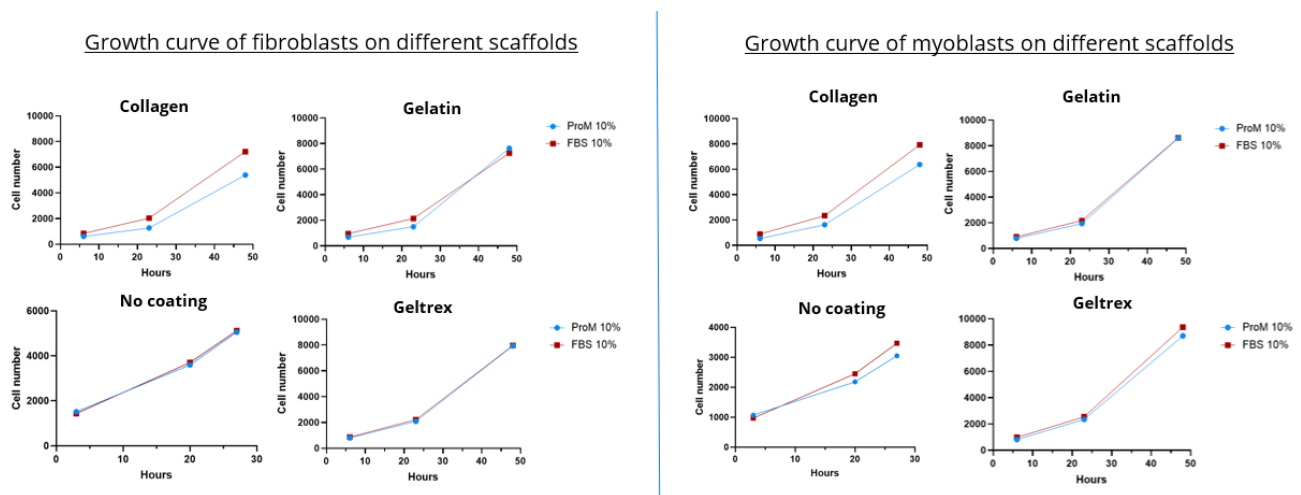


Figure 2: Comparison of growth on different scaffolds between 10% FBS and 10% Proliferum<sup>®</sup> M in DMEM/F12.