



## HyClone™ media and supplements

# SFM4MegaVir

HyClone SFM4MegaVir is a regulatory-friendly and animal-derived component-free (ADCF) cell culture medium. The medium was designed to increase process yields in the manufacture of viral vaccines in a variety of anchorage-dependent cell lines including Vero, MDCK, COS-7, and MDBK cells. SFM4MegaVir has been successfully tested in a variety of culture systems for cell growth and virus production including T-flasks and suspension microcarrier cultures. SFM4MegaVir is available in liquid and powder formats in user-friendly packaging (Fig 1).

### Key features of SFM4MegaVir medium include

- ADCF cell culture medium
- Designed for high viral vaccine production
- Suitable for direct adaptation
- Manufactured from traceable components and according to cGMP guidelines

## Specifications

SFM4MegaVir medium does not contain L-glutamine. The liquid medium does not contain poloxamer 188.

The lipid composition of powder SFM4MegaVir medium has been formulated differently from the lipid composition of liquid SFM4MegaVir medium. The lipids in the liquid product are in micelle form, whereas in the powder product the lipids have been complexed to enhanced stability in the desiccated form and are of different composition. Both products perform well in their intended applications, although the performance can be dependent of the cell type and the specific clone being used. SFM4MegaVir MP medium has the same formulation as the liquid product and is available as a multipart (powder and lipid components) medium.

SFM4MegaVir medium is produced from traceable components according to cGMP guidelines.

### Product handling

Store medium at 2°C to 8°C, away from light. Powder medium should be stored protected from moisture in a tightly sealed container.



**Fig 1.** SFM4MegaVir medium is available as liquid or powder in pack sizes suitable for small-volume cell culture as well as large-scale bioprocessing applications.

## Suggested preparation

### Reconstitution of SFM4MegaVir powder medium

1. While stirring, add 16.1 g/L of SFM4MegaVir powder medium to cell culture-grade water (around 25°C) at 90% of final preparation volume. If your water source is normally cool, it can be useful to adjust the water temperature. Using warmer room temperature water (22°C to 25°C) will improve solubilization time. Mix for 20 min until dissolved.
2. Add 2.95 g/L sodium bicarbonate. Allow to mix for 20 min.
3. Bring vessel to final volume with cell culture-grade water. Allow solution to mix for 10 to 20 min.
4. Check pH and osmolality. Expected values:
  - 7.0 to 7.4 pH
  - 290 to 340 mOsm/kg
5. Sterile filter into desired container using a 0.2 µm sterile filter.

## Preparation notes

SFM4MegaVir medium does not contain L-glutamine.  
Recommended concentration: 4 mM.

## Reconstitution of SFM4MegaVir MP medium

1. Prepare an aliquot of 90% total volume with cell culture-grade water in an appropriately sized mixing container.
2. Add 16.1 g/L SFM4MegaVir MP medium Part A and mix until completely dissolved.
3. Add 2.95 g/L sodium bicarbonate.
4. Supplement with desired amount of L-glutamine (recommended concentration: 4 mM)
5. Bring solution to total volume with water.
6. Adjust pH to between 7.0 and 7.2.
7. Sterile filtration should be performed immediately after pH adjustment. A positive pressure filtration system equipped with a membrane of 0.2 µm pore size is recommended.
8. Add 10 mL of sterile SFM4MegaVir MP medium Part B to each liter of finished medium.

## General culture recommendations

The following procedure can be used for maintaining cells in SFM4MegaVir medium:

1. Remove liquid medium from each culture vessel.
2. Carefully rinse cell monolayer once using magnesium and calcium-free phosphate buffered saline.
3. Add minimum amount of HyQTase enzymatic cell detachment solution (enough to just wet monolayer) to each vessel and incubate for 3 min.
4. Following the incubation, observe monolayer for cell detachment. When cells are completely detached, you may remove the HyQTase enzymatic cell detachment solution by centrifugation at 100 × g for 10 min. Removal of HyQTase enzymatic cell detachment solution is not necessary for subculturing.
5. Cell counting can be performed, for example, using a hemacytometer.
6. Seed new vessels with approximately  $2.5 \times 10^4$  cell/cm<sup>2</sup>. Incubate at 37°C in 5% CO<sub>2</sub> until culture is 80% to 90% confluent.
7. When initiating roller bottle cultures, the roller bottle apparatus should be set to 1 rpm until the cells have attached firmly to the roller bottle surface.

## Cryopreservation

SFM4MegaVir medium adapted cells can be cryopreserved in a 1:1 mixture of fresh and conditioned SFM4MegaVir supplemented with 7.5% DMSO.

## Quality control testing

Quality control test specifications are listed in Table 1.

**Table 1.** Test specifications<sup>1</sup>

|             |                               |
|-------------|-------------------------------|
| Appearance  | Clear solution                |
| Osmolality  | 290 to 340 mOsm/kg            |
| pH          | 7.0 to 7.4                    |
| Sterility   | No growth (bacteria or fungi) |
| Endotoxin   | < 10.0 EU/mL <sup>1</sup>     |
| Application | Growth promotion <sup>1</sup> |

<sup>1</sup> Refer to certificate of analysis for actual results.

## Custom production

Formulations and delivery systems can be customized to your specific process requirements or optimized to maximize process yields.

### Rapid Response Production (RRP)

Our RRP program manufactures up to 200 L of your custom prototype formulation within seven working days of your request. Use our RRP service to expedite the development and testing of custom buffers and process liquids for your biopharmaceutical manufacturing process.

## Related products

### HyClone HyQTase enzymatic cell detachment solution

HyQTase enzymatic cell detachment solution is an ultrafiltered solution of proteolytic and collagenolytic enzymes combined to enable rapid dissociation, while being gentle to cells. The non-mammalian formulation of HyQTase makes it suitable for serum-free applications and eliminates the need for neutralizing or enzyme inhibitors.

## Ordering information

| Product                                                     | Size                | Product code |
|-------------------------------------------------------------|---------------------|--------------|
| HyClone SFM4MegaVir<br>liquid medium<br>Without L-glutamine | 500 mL bottle       | SH30552.01   |
|                                                             | 1000 mL bottle      | SH30552.02   |
|                                                             | 6 × 1000 mL bottles | SH30552.LS   |
|                                                             | 5 L bag             | SH30552.03   |
|                                                             | 10 L bag            | SH30552.04   |
|                                                             | 20 L bag            | SH30552.05   |
|                                                             | 50 L bag            | SH30552.06   |
|                                                             | 100 L bag           | SH30552.07   |
|                                                             | 200 L bag           | SH30552.08   |
|                                                             | 500 L bag           | SH30552.09   |
| HyClone SFM4MegaVir<br>powder medium<br>Without L-glutamine | 1 × 5 L             | SH30587.01   |
|                                                             | 1 × 10 L            | SH30587.02   |
|                                                             | 1 × 50 L            | SH30587.03   |
|                                                             | 1 × 100 L           | SH30587.04   |
|                                                             | 1 × 500 L           | SH30587.05   |
|                                                             | 1 × 1000 L          | SH30587.06   |
| HyClone SFM4MegaVir MP<br>Without L-glutamine               | 10 L                | SH30952.01   |
|                                                             | 50 L                | SH30952.02   |
|                                                             | 100 L               | SH30952.03   |

| Related products                              | Size          | Product code |
|-----------------------------------------------|---------------|--------------|
| HyQTase enzymatic cell<br>detachment solution | 100 mL bottle | SV30030.01   |

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