

# Cell Recovery Procedure

For InvivoGen's engineered Ramos cell lines provided in shipping flask

<http://www.invivogen.com/ramos-blue>

For research use only

Version # 17K04-MM

## HANDLING PROCEDURES

### Contents and Storage

- 1 flask of engineered Ramos-Blue™ cells in growth medium
- 2 x 20 ml syringes
- 1 x 5 ml syringes
- 4 blunt-end needles

### Cell Handling Upon Arrival

- Inspect the package in order to detect any leak. If a leak is detected, contact InvivoGen immediately.
- Check the cells using a microscope.
- Process **as soon as possible** upon receipt.

*Note: If the cells cannot be handled immediately, place the flask at room temperature (15-25°C) for a maximum of 48 hours in a horizontal position.*

- DO NOT STORE AT 4°C.
- **Transfer flask to an incubator at 37°C in 5% CO<sub>2</sub>.**
- Incubate for 12-24 hours in a **HORIZONTAL** position.

### Required Cell Culture Media

- **Growth medium:** IMDM (Iscove's Modified Dulbecco's Medium), 2 mM L-glutamine, 10% (v/v) heat-inactivated fetal bovine serum (30 min at 56°C), Pen-Strep (100 U/ml-100 µg/ml), 100 µg/ml Normocin™

*Note: The use of Normocin™ together with Pen-Strep is required to keep the cells free of microbial contaminants.*

- **Freezing Medium:** IMDM, 2 mM L-glutamine, 20% (v/v) fetal bovine serum, 10% (v/v) DMSO

### Cell Recovery

Ramos-Blue™ cells should arrive in suspension. The shipping flask should always be manipulated in a VERTICAL POSITION.

1. Following a 12-24 hr incubation in a HORIZONTAL position at 37°C in 5% CO<sub>2</sub>, recover cells according to the procedure described below.

2. Disinfect blue port with 70% ethanol.

3. Shake gently the shipping flask for 10-15 seconds to resuspend the cells more uniformly.

4. Whilst holding the shipping flask in a vertical position, withdraw SLOWLY all the medium (~20 ml) through the blue port using a 20 ml syringe with needle (provided).

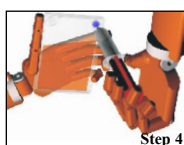
*Note: If the blue port is blocked, see Troubleshooting.*

5. Transfer the cells to a 50 ml sterile conical tube.

6. Centrifuge the vial at 1000-1200 RPM (RCF 200-300 g) for 5 minutes.

7. Remove supernatant and resuspend cells with 1 ml of growth medium without selective antibiotics.

8. Separate the cells by pipetting up and down.



9. Transfer the cells to a T-75 culture flask containing 14 ml of growth medium without selective antibiotics.

10. Incubate at 37°C in 5% CO<sub>2</sub>.

*Note: It may take 7 days for the cells to fully recover.*

12. Assess cell viability and proceed to cell maintenance or frozen stock preparation.

### Frozen Stock Preparation

The first propagation of cells should be for generating stocks for future use. This ensures the stability and performance of the cells for subsequent experiments.

1. Resuspend cells at a density of 5-7 x 10<sup>6</sup> cells/ml in freezing medium freshly prepared with cold growth medium.

*Note: A T-75 culture flask typically yields enough cells for preparing 3-4 frozen vials.*

2. Dispense 1 ml aliquots of the cell suspension into cryogenic vials.

3. Place vials in a freezing container and store at -80°C overnight.

4. Transfer vials to liquid nitrogen for long-term storage.

*Notes:*

- If properly stored, cells should remain stable for years.

- Recover thawed cells in growth medium without selective antibiotics.

### Cell Maintenance

- Maintain and subculture the cells in growth medium supplemented with the appropriate selective antibiotic(s) (see original cell line data sheet).

- Pass the cells every 3-4 days by inoculating 0.5 x 10<sup>6</sup> cells/ml.

*Notes: To ensure best results:*

- Use Ramos-Blue™ cells with less than 25 passages.

- Handling of cells should be as short as possible to prevent any damage resulting from prolonged stay at room temperature without 5% CO<sub>2</sub>.

### Troubleshooting

Flow deblocking procedure (for shipping flask).

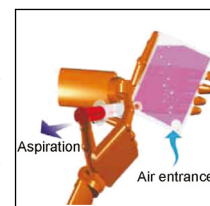
If media accidentally enters into the microfluid trap and reaches the filter, the inflow will be blocked. To remedy this:

1. Place the shipping flask upside down. Tilt the shipping flask so that the air pocket is in the corner above the blue port.

2. Withdraw 7-10 ml of fluid (air or media) from the blue port. After a couple of seconds, air bubbles will appear emerging from the air filter. This indicates that the filter and microfluidic trap are liquid-free, and the normal flow has been re-established.

3. Continue the filling operation in the upright position.

*Note: This operation can be repeated any time the port is blocked.*



### TECHNICAL SUPPORT (InvivoGen Asia)

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