

**Document Number: SASoM/EQUIP/052.v2****Title: Use and Maintenance of the BioRad Mini-Sub Cell GT Agarose Gel Electrophoresis System****Version: v2****Author: Peter Mullen**

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| Effective from: | 01/02/2018 |
| Valid to:       | 31/01/2023 |

| SOP History |            |                              |
|-------------|------------|------------------------------|
| Number      | Date       | Reason for Change            |
| v1          | 01/02/2013 | Original                     |
| V2          | 01/02/2018 | Update & amend author detail |
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### 1.0 Purpose –

The purpose of this SOP is to outline the principles of the routine use of the BioRad Mini-Sub Cell GT Agarose Gel Electrophoresis System in Laboratory 248 at the St Andrews School of Medicine (SASoM).

### 2.0 Scope –

This SOP applies to routine use and maintenance of the BioRad Mini-Sub Cell GT Agarose Gel Electrophoresis System within the SASoM.

### 3.0 Responsibilities –

It is the responsibility of all users of the BioRad Mini-Sub Cell GT Agarose Gel Electrophoresis System within the SASoM to comply with this SOP.

### 4.0 Procedure –

#### Principles of Operation:

Agarose Gel Electrophoresis tanks allow the rapid analysis of nucleic acid samples in submerged agarose gels.

#### Prepare agarose gel for casting:



Equipment Operation Procedure

- Determine appropriate percentage gel to run, and mix specified amount of agarose with 1X TBE buffer. Heat solution in glass flask in microwave until mix, swirling the flask intermittently. Let solution cool to 60 degrees Celsius before adding SybrSafe and pouring into the cast with appropriate comb. If not using a gel caster with edges, secure the edges with laboratory tape, and pour slowly to ensure no leakage.
- Once solidified, remove the comb from the gel and remove from the caster or remove tape.

Running the gel:

(The gel apparatus should be placed if not already located within another container to catch any overflow when preparing the gel.)

- Submerge the gel beneath 2-6mm of 1X TBE buffer.
- Prepare the samples for loading, including use of appropriate loading dye.
- Load the samples into the bottom of the wells.
- Place the lid on the DNA cell carefully to not disturb the samples, matching the red and black banana jacks on the lid with the ones on the base.
- With the Power Supply OFF, connect the electrode cords to the power supply (red to (+) jack, black to (-) jack).
- Turn ON the power and set the power pack to the necessary conditions – see manual for suggestions. Power requirements will depend on the gel thickness, length, agarose, concentration, and type of buffer used.
- At the end of the run, turn OFF the power supply and disconnect the cable from the power pack.

**5.0 Personal protection –**

Howie coat must be worn at all times.

Gloves as specified in the appropriate COSHH RA.

**6.0 Spillages -**

Always clean up any spills to both the BioRad Mini-Sub Cell GT Agarose Gel Electrophoresis System and the bench immediately after use.

Only you know what you have spilt and are aware of that chemicals hazard!

Mop up spills with paper towels. Wash the site of spillage with water & detergent.

**7.0 General maintenance -**

Clean surfaces of the apparatus with soft cloth and mild detergent.

**8.0 Training –**

All users have to be trained before using the Instrument by a designated person.



## 9.0 Related documents –

- 9.1 Equipment manual
- 9.2 Equipment Maintenance Information sheet
- 9.3 Risk assessments – RA/GEN/037
- 9.4 SOP SASoM/EQUIP/032  
Use and Maintenance of the Biorad '200', '300', '1000' and '3000'  
Power-Packs

## 10.0 Approval and sign off –

### Author:

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Management Approval:

Name: Mary Wilson

Position: Laboratory Manger

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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Name: Alex MacLellan

Position: QA Manager

Signature: \_\_\_\_\_ Date: \_\_\_\_\_