

Document N	Number: SASoM/EQUIP/051.v2
Title:	Use and Maintenance of the Invitrogen XCell SureLock® Mini-Cell Electrophoresis Apparatus
Version:	v2
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SOP History		
Number	Date	Reason for Change
v1	01/02/2013	Original
V2	01/02/2018	Update & amend author detail

1.0 Purpose -

The purpose of this SOP is to outline the principles of the routine use of the Invitrogen XCell SureLock® Mini-Cell Electrophoresis Apparatus in Laboratory 248 at the St Andrews School of Medicine (SASoM)

2.0 Scope -

This SOP applies to routine use and maintenance of the Invitrogen XCell SureLock® Mini-Cell Electrophoresis Apparatus within the SASoM.

3.0 Responsibilities

It is the responsibility of all users of the Invitrogen XCell SureLock® Mini-Cell Electrophoresis Apparatus within the SASoM to comply with this SOP.

4.0 Procedure –

Principles of Operation:

Electrophoresis gel tanks allow the rapid analysis of protein samples in (pre-cast) miniature polyacrylamide gels.

Preparing and assembling the precast gel for the XCell SureLock® Mini-Cell:



- Removing the gel cassette Cut open gel cassette pouch and drain away packaging buffer. Remove the cassette from the pouch and rinse in deionized water.
- Peel off tape covering slot on back of cassette. Pull comb out of cassette to expose wells.
- Use a pipette to gently wash wells with 1X running buffer. Invert and shake to remove buffer, repeat twice and fill wells with running buffer.
- Lower the buffer core into the lower buffer chamber so the negative electrode fits in the opening in the gold plate on the lower buffer chamber.
- Insert the gel tension wedge in the *XCell SureLock*® behind the buffer core, leaving the tension wedge in an unlocked position resting on the bottom of the Lower Buffer Chamber.
- Insert gel cassettes into the lower buffer chamber, placing one cassette behind the core and one cassette in front of the core. For each cassette, the shorter well side of the cassette faces in towards the buffer core. The slot on the back of the cassette must face out towards the lower buffer chamber. If running one gel, replace the rear gel cassette with the Buffer Dam.
- Pull forward on the Gel Tension Lever toward the *XCell SureLock*® unit until the lever comes to a firm stop and the gels or gel/buffer dam appear snug against the buffer core. When fully assembled, cassettes and Buffer Core are in place and Gel Tension Wedge is locked into position.

Loading Sample Wells:

- Prepare samples in appropriate sample buffer at desired protein concentration.
- Prepare appropriate running buffer.
- The Upper Buffer Chamber (cathode) is the void formed between the two gel cassettes (or one cassette and buffer dam) on each side of the buffer core.
- Fill Upper Buffer Chamber with 200m running buffer, using enough to completely cover the wells.
- Ensure Upper Buffer Chamber is not leaking reassemble if necessary (if buffer level drops).
- Pipette sample into the gel wells by gently lowering the tip into the bottom of the well and slowly releasing the sample into the well.
- After wells are loaded, fill the Lower Buffer Chamber (anode) by pouring 600ml of running buffer through the gap between the Gel Tension Wedge and the back of the Lower Buffer Chamber.

Running the Gel:

- Align the lid on the Buffer Core, which can only be achieved it the (-) electrode is aligned over the banana plug.
- 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.

Disassembling the XCell SureLock® Mini-Cell:



- At the end of the run, turn OFF the power supply and disconnect the cable from the power pack.
- Remove the lid and unlock the Gel Tension Lever.
- Remove the gel cassettes from the mini-cell, handling by their edges only.
- Lay the gel cassettes (well side up) on a flat surface and carefully insert the Gel Knife's bevelled edge into the narrow gap between the two plates of the cassette.
- Push up and down on the Knife's handle to separate the plates until you hear a cracking sound (which means the bonds have been broken holding the plates together). Repeat until the two plates are completely separated.
- Upon opening the cassette, the gel may adhere to either side. Remove and discard the plate without the gel proceed to blotting or staining.

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 Invitrogen XCell SureLock® Mini-Cell Electrophoresis Apparatus 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 -

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 -

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