

Document N	Number: SASoM/EQUIP/065.v2
Title:	Use and Maintenance of the AMAXA Nucleofector
Version:	v2
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Effective from:	09/05/2019			
Valid to:	08/05/2024			
SOP History				
Number	Date	Reason for Change		
v1	09/05/2014	Original		
V2	09/05/2019	Five Year Review		

1.0 Purpose -

The purpose of this SOP is to outline the principles of the routine use of the Amaxa Nucleofector in Laboratory 248 L at the St Andrews School of Medicine (SASoM).

2.0 Scope –

This SOP applies to routine use and maintenance of the Amaxa Nucleofector within the SASoM.

3.0 Responsibilities -

It is the responsibility of all users of the Amaxa Nucleofector within the SASoM to comply with this SOP.



4.0 Procedure –

Precautions

This Nucleofector is designed to deliver variable HIGH VOLTAGE electrical impulses for the purpose of introducing DNA into eukaryotic cells. These electrical impulses can be DEADLY!

Users MUST ONLY use this equipment after receiving specific training.

- 1. Do NOT attempt to open either the device or the cuvette holder. The device does not contain user serviceable parts.
- 2. Only use the device when it is set on top of a safe and stable table or bench.
- 3. Do not expose the device to a humid environment. Set up the device in a dry place.
- 4. Avoid spilling

The Nucleofector™ can be used under a sterile hood including UV radiation.

• If repeated UV-radiation of the hood is required, remove the nucleoporator for the time of the radiation or cover the device.

The Nucleofector comes with default nucleoproation programs, which cannot be changed by the end user.

ONLY use Amaxa nucleoproation solutions or Mirus electroporation solutions tested for use with the Amaxa nucleoporator. Use of other uncertified solutions may damage the nucleoporator!

Procedure:

- 1. Unpack the Amaxa cuvettes just prior to the experiment. Make sure that the outer contact areas are dry.
- 2. Turn on the Nucleofector[™] by using the power switch on the rear side. The keypads are active when the power indicator is on.
- 3. The device automatically performs a self-test (3sec) that is accompanied by optical and acoustic signals, followed by software version numbers being displayed.
- 4. Once the display shows a Nucleofector[™] program, select the desired program by pressing the up and down buttons on the front panel.
 - a. With all subsequent activations of the Nucleofector™ the display will show the program last entered).
- 5. Open the cuvette holder by turning the wheel counter-clockwise 180°.
- 6. Place the closed cuvette filled with 100 μl nucleofection sample in the cuvette holder and rotate the turning wheel clockwise.
 - a. The wheel must be turned completely to the blocked position, in order for the cuvette to contact the electrodes.
 - b. Only utilize unused amaxa cuvettes.
- 7. Trigger the pulse by briefly pressing the start button "X".
- 8. A successful pulse is indicated by showing "OK" on the display. If the device was unable to trigger a pulse or if the pulse was not successful, this will be indicated by showing "Err" on the display, an acoustic signal and the error indicator being

illuminated. To continue working acknowledge the error by pressing any key. The nucleofector can be re-used after 10s.

- 9. Remove the cuvette after turning back the wheel 180° counter-clockwise.
- 10. Remove the nucleofection sample from the cuvette with the plastic pipette provided in the Nucleofector[™] Kit.
- 11. Discard cuvettes after single use.
- 12. To continue working, press any key to acknowledge the "OK". The device can be re-used 5s after the last pulse.
- 13. When finished, remove the last cuvette from the cuvette holder and switch off the Nucleofector[™].

<u>Maintenance</u>

- 1. To clean the case, first unplug the power supply.
- 2. Use a damp cloth to wipe down the outer case (water or 70 80% ethanol).
 - a. Avoid wetting the cuvette holder within the turning wheel and the connectors located on the rear of the device.

5.0 Personal protection -

Howie coat must be worn at all times.

6.0 Training –

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

7.0 Related documents -

7.1 Amaxa nucleoporator manual



8.0 Approval and sign off –

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STANDARD OPERATING PROCEDURE

Please sign below to indicate you have read this S.O.P and understand the procedures involved.

NAME	POSITION HELD	SIGNATURE	DATE