Document Number:	**SASoM/EQUIP/106.v1**
Title:	**Use and Maintenance of Leica Bond RX Autostainer**
Version:	**v1**
Author:	**In Hwa Um**

Effective from:	08/02/2021
Valid to:	08/02/2026

SOP History		
Number	Date	Reason for Change
v1	08/02/2021	Original

1.0 Purpose –

The purpose of this SOP is to outline the principles of the routine use of Leica Bond RX autostainer in Laboratory 248 at the St Andrews School of Medicine (SASoM).

2.0 Scope –

This SOP applies to routine use and maintenance of Leica Bond RX autostainer within the SASoM.

3.0 Responsibilities –

It is the responsibility of all users of Leica Bond RX autostainer within the SASoM to comply with this SOP. All users must be trained and signed off for competency.

4.0 Procedure –

4.1 Start up the desktop and turn on the Leica Bond RX

4.2 Preliminary checks and startup

Carry out the following steps before beginning a run:

1. Ensure that the processing module is clean and that all maintenance tasks are up to date (see 12.1 Cleaning and Maintenance Schedule in the Help tap in Bond application, Figure1).

Figure 1 Function taps in Bond application

2. Daily pre-run tasks are: (i) Check bulk waste containers are no more than half full; on the BOND RXm, use the white horizontal line on the container label as a guide to the half-full level (ii) Check wash blocks and mixing station – clean or replace if necessary.
3. Check that the slide labeller has an adequate supply of labels.
4. If the processing module and controller are not on, turn them on now.
5. When the controller is running, start the research client
6. Once the software has started, check the Status screens to ensure there are no processing module notifications. Rectify before attempting to run any slides.

4.3 Protocol and reagent checks

1. Select the Protocol setup icon (shown at the right) on the function bar.
2. Check that "*IHC Protocol F" is listed in the table. If the protocol is not listed select All in the Preferred status filter at the bottom of the screen (see 7.2 Protocol Setup Screen.)
3. Select the protocol in the table, click Open, and note the preferred detection system in the Edit protocol properties dialog; BOND Polymer Refine Detection. Make sure that the protocol is selected as Preferred near the top of the dialog (you need to be logged on with a supervisor user role to make the protocol preferred, if it is not).
4. Select the Reagent setup icon (shown at the right) on the function bar.
5. On the Setup tab select Primaries as Reagent type, Leica Microsystems as Supplier, and All for Preferred status in the filters at the bottom of the screen.
6. Locate each of the antibodies that we need (*CD5, *CD3, *CD10, and *Bcl-6) and double-click to open the Edit reagent properties dialog: (i) Click Restore factory default protocols (you need to be logged on with a supervisor user role to restore factory defaults). This ensures that the default staining protocol, *IHC Protocol F, and default pre-treatment protocols are set. (ii) Ensure that the reagent is checked as Preferred (you need to be logged on with a supervisor user role to make the reagent preferred, if it is not). (iii) Click Save.
7. Now go to the Inventory tab and select Reagent containers as Package type, Primaries as Reagent type, In stock for Inventory status, Leica Microsystems for Supplier and Preferred for Preferred status in the filters at the bottom of the screen. All the antibodies we need should appear with the volumes available. Make sure that there is sufficient volume for each antibody.
8. On the same tab, select BOND detection systems as Package type and In stock for Inventory status. Check that the preferred detection system, BOND Polymer

Refine Detection is listed in the table, and that there is enough volume (see Reporting Volume for Detection Systems in 8.3.1 Determining Reagent Volume).

4.4 Setting up slides

1. Entering study details - Click Add study in the Slide setup screen. The software displays the Add study dialog. Study ID, study name, study comments, researcher, dispense volume and preparation protocol can be added.
2. Entering slide details – Click add slide to display the dialog. Add slide comments, tissue type, marker, staining protocol, preparation, HIER options and click add slide.
3. Print labels from the slide setup screen.
4. Loading slides with a cover tile as shown in the figure 2.

Figure 2 Loading slide with a covertile correctly

5. Loading the reagents required for the run

4.5 Running the protocol

With slides and reagents configured and loaded in the processing module, you are ready to start processing.

1. Ensure that the processing module lid is closed.
2. Press the Load/Unload button on the front cover beneath the loaded slide tray. BOND RX or BOND RXm locks the tray, and the slide tray LED should glow orange. Listen as the slide tray locks – if there are any loud cracking or clicking sounds it is likely that Cover tiles are out of position. In this case unlock the tray, remove, and check the slides and Cover tiles.
3. As soon as the main robot is available, the BOND RX system images the slides
4. Provided there are no unrecognized or incompatible slides, the slides are now ready for a staining run. The progress bar will be in the starting phase (refer to Run Progress in 5.1.6 Run Progress Indicator) and the run status will be Slides ready (refer to Run Status in 5.1.6 Run Progress Indicator).

Click ▶ to begin running the protocol (or you can set the instrument to start later; see 5.1.8 Delayed Start).

The system will schedule the run then the progress bar will switch to the processing phase and the run status will be Proc (OK).

You should start only one run at a time, and then allow 1-2 minutes before starting the next run. Wait for a short while after starting each run to confirm it has started successfully. If not, the run status is set to Rejected/Slides ready. See Run Status.

While a run is being processed, the Load/Unload button for its slide staining assembly will not release the slide tray. Click ■ below the tray on the System status screen to abandon the run (see 5.1.7 Starting or Stopping a Run in the manual).

4.6 Finishing

When the processing run is finished, the processing module tab icon flashes (see 5.1.1 Processing Module Tabs). If there were unexpected events during the run, the display text is red and the notification symbol will appear below the tray and on affected slides.

. 1. Remove reagent trays.

2. Press the Load/Unload button and remove slide trays from the processing module. Again listen for cracking or clicking sounds as the tray unloads. If you hear this inspect in and around the slide staining assembly for broken slides in the unexpected event that a misaligned slide has been crushed; if so contact customer support. 3. Place the slide tray on a flat, stable surface. Remove the Cover tiles by holding down the label of the slide, then carefully putting pressure downwards on the neck of the Cover tile to lift the end of the Cover tile off the slide. Do not slide the Cover tile across the surface of the slide, as you may damage the tissue, making slide reading difficult. 4. Lift the Cover tiles from the slides and clean them as described in 12.3 Cover tiles. 5. Remove the slides and proceed with the next step in processing them according to your laboratory processes. You can choose to rerun any slides (see 9.3 Slide Properties and Slide Rerun).

5.0 Personal protection –

Howie coat must be worn at all times.

6.0 Training –

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

7.0 Related documents –

7.1 Risk assessments
CHARM-RA22386-Use of the Leica Bond Rx Autosampler

7.2 SOPs
SASoM-METHOD-133-IHC and IF using the Leica Bond Rx Autosampler

8.0 Approval and sign off –

Author:

Name: In Hwa Um

Position: Post Doc

Signature:  Date: 1/11/21

Management Approval:

Name: Peter Mullen

Position: SOP Administrator

Signature:  Date:

QA release by:

Name: Claire Sneddon

Position: QA Manager

Signature:  Date: 26/10/2021

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