

PROTOCOL System 1: preparation of 72 96-well crystallization plates filled with screening kits (LMB plates)

1. Prior to performing the procedure, ensure that the system's robots are initialized and their controlling software is open. Turn on the chiller of the tube-cooling carrier about 30 minutes before the main program will be started.
2. Place a test plate on the motorized SBS carrier of the plate sealer. Run the plate sealer and check that the film is properly applied. Repeat this test twice more to verify that the plate sealer is ready.
3. Then, add 20 L of deionized water to the main container of the liquid handler. Disconnect the coupling inserts from the small container (20% ethanol rinsing solution) and connect the inserts to the main container.
4. Enter the appropriate screen name on the inkjet printer touchscreen. Then, open and close the carousel door to trigger the carousel rotation. Open the door when the first stack presents itself.
5. Fully load the first stack with 22 crystallization plates, each with column 1 facing out. Fully load the next two stacks in the same way.
6. Load the remaining 6 plates in the highest positions of the fourth stack. Then, close the carousel door.
7. Verify that the chiller display indicates 14 °C. Gently and repeatedly invert the selected screening kits for 1 minute. Then, open the front panel of the liquid handler.
8. Open the tubes and place them in the cooling carrier according to the standard 96-well layout (A1, A2, etc.). Upon placing each tube in the carrier, place its lid on a tray in the same 96-well layout.
9. Cross-check the tube positions and ensure that all tubes are level and settled in the carrier. Then, close the front panel.
10. In the 'Startup' window of the liquid handler software, select 'Run maintenance' and open the flushing program. Run the program to flush the 20% ethanol from the system and to wash the outsides of the liquid-dispensing tips.
11. When flushing is complete, click 'Cancel' to return to 'Startup'. Select 'Run an existing process' and click 'Start your selection'. Open the 'MRC kit dispensing' program. Fill in '18' for 'Instances' in the configuration screen and run the program.

12. Monitor the system as the first four plates are labeled, filled, and sealed.

13. Once all 72 plates have been prepared and placed back in the carousel, switch the coupling inserts from the main container to the small container. Run the 'Start up flush' program (see step 1.1.10).

14. Turn off the chiller and discard the empty screening kit tubes. Carefully remove the 72 prepared plates from the carousel. Discard incorrectly-filled or poorly-sealed plates. Store the ready-to-use plates at 10 °C.

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