

Full Moon Biosystems (FMB) protocol for processing FMB PowerMatrix (modified oligo) slides:

Overview

After printing amino-modified long oligonucleotides the Full Moon Biosystems (FMB) PowerMatrix slides are then processed to bind the single stranded probe DNA to the slide and prevent non-specific hybridisation to the substrate. The outlined protocol is based on the method recommended by Full Moon Biosystems (<http://www.fullmoonbio.com/>).

Equipment and material

- Full Moon Biosystems PowerMatrix slides for modified oligos (Full Moon Biosystems; Cat. No. PXP 50 M)
- Slide staining rack (Philip Harris; Cat. No. B52651)
- Slide staining trough (Philip Harris; Cat. No. B52649)
- Orbital shaker (Stuart Scientific; mini orbital shaker SO5)
- Hettich Rotina 35 microtitre plate centrifuge
- Microscope slide box (Merck EuroLab; Cat. No. 406/0286/00)
- Horizontal laminar flow work station (Jencons; Cat. No. 566-031)
- Bovine serum albumin (BSA) fraction V (Sigma; Cat. No. A-7906).
- Sodium dodecyl sulfate (SDS), molecular biology grade (Sigma; Cat. No. L-4390)
- Blocking Solution: 2xSSC, 0.2%SDS, 0.1%BSA
- Ultra pure water (do not use MilliQ water)
- Standard photographic air duster
- Air tight plastic box (30 x 30 x 18 cm) with lid

Protocol

For best results, perform steps 4 onwards just before hybridisation.

1. Incubate slides in a chamber with 65 to 75 % relative humidity overnight:
 - ◆ Within an air tight plastic box add 100 g solid sodium chloride to 50 ml water
2. Allow slides to dry at room temperature for 30 minutes
3. Slides that are not needed for one or two months can be stored at this stage:
 - ◆ Place the slides in a clean microscope slide box
 - ◆ Then place the microscope slide box in a pastic bag and seal this bag
 - ◆ Store the sealed bag at 2 to 8 °C for 3 to 6 months
4. Meanwhile prepare and preheat the blocking solution to 55 °C in a waterbath
5. Pour the blocking solution into a slide staining trough and then transfer the slides to a slide staining rack and place this rack in the staining trough
6. Place the trough containing the slides on the orbital shaker at 50 rpm for between 20 to 30 minutes at room temperature
7. Remove rack, blot off excess solution by placing on a piece of tissue.
8. Place the slides in the staining rack in the plastic box filled with 2.5 L ultra pure water and put the lid on
9. Place the plastic box with the slides on the orbital shaker at 50 rpm for 15 minutes
10. Remove rack, blot off excess solution by placing on a piece of tissue.
11. Repeat steps 8 to 10 twice (three water washes in total)
12. Transfer slides from the rack to a microscope slide box with fresh tissue in the base
13. Centrifuge at 650 rpm for 15 minutes in a microtitre centrifuge to dry the slides

14. Remove any water droplets from the slide using an air duster
15. Store in a clean sealed slide box at room temperature and in the dark (one to two months) until ready to hybridise

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