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Life Sciences

SnAPPShots

A brief report from the Corning Applications Group

Processing Arrays with Pronto!™ Universal Hybridization System in Tecan HS 4800 Hybridization Station

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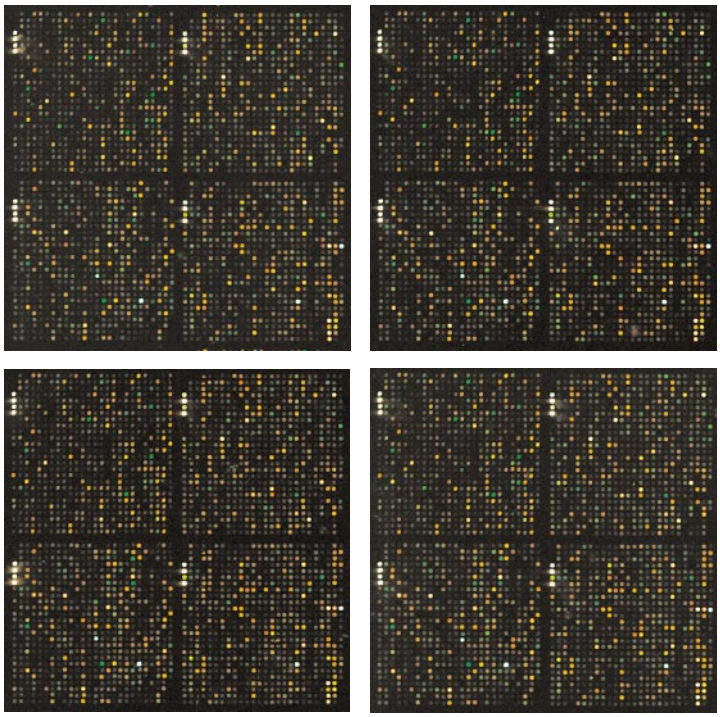
The reliability of microarray data is affected by a large number of factors. Foremost is the quality of the substrate and the reagents used to manufacture and process the microarrays.

Further improvement in reproducibility and sensitivity may be achieved through automation. Researchers have long sought the ability to perform multiple array hybridizations under tightly controlled and reproducible conditions. Array experiments typically call for processing at least four arrays in parallel, which, when carried out in single-slide hybridization chambers and glass containers, requires significant operator intervention and introduces a high level of experimental error that decreases the sensitivity of the assays.

Corning welcomes the availability of reliable automated systems and seeks to facilitate their use by providing protocols for the use of our market-leading Pronto! hybridization reagents in these automated environments.



Highly Reproducible Hybridization of cDNAs Arrayed on Corning® UltraGAPS™ Slides
Four human cDNA arrays obtained from the Institute for Genomic Research (TIGR) were treated with the background-reduction reagents in the Pronto! Background Reduction Kit (Cat. No. 40029) in glass containers, dried, and placed in a Tecan HS 4800 hybridization station. The other steps, from pre-hybridization to drying, were completed using Corning Pronto! hybridization reagents exclusively and Pronto! *Plus* labeling reagents exclusively. The CV's across the arrays tested were 15% in both channels.

PROGRAM START

1 WASH: Temp.°C: 42.0, 42.0, 42.0, First: Yes, Ch.: 2, Runs: 1
Wash time: 0:00:15, Soak time: 0:00:15

2 WASH: Temp.°C: 42.0, 42.0, 42.0, First: No, Ch.: 2, Runs: 1
Wash time: 0:00:15, Soak time: 0:00:00

3 HYBRIDIZATION: Temp.°C: 42.0, 42.0, 42.0,
Agitation Frequency: Medium, Time: 0:15:00

4 WASH: Temp.°C: 42.0, 42.0, 42.0, First: No, Ch.: 2, Runs: 1
Wash time: 0:00:30, Soak time: 0:00:00

5 PROBE INJECTION: Temp.°C: 42.0, 42.0, 42.0

6 HYBRIDIZATION: Temp.°C: 42.0, 42.0, 42.0
Agitation Frequency: Medium, Time: 16:00:00

7 WASH: Temp.°C: 42.0, 42.0, 42.0, First: No, Ch.: 1, Runs: 2
Wash time: 0:01:00, Soak time: 0:01:00

8 WASH: Temp.°C: 23.0, 23.0, 23.0, First: No, Ch.: 5, Runs: 2
Wash time: 0:01:00, Soak time: 0:01:00

9 WASH: Temp.°C: 23.0, 23.0, 23.0, First: No, Ch.: 6, Runs: 2
Wash time: 0:01:00, Soak time: 0:01:00

10 WASH: Temp.°C: 23.0, 23.0, 23.0, First: No, Ch.: 6, Runs: 1
Wash time: 0:00:30, Soak time: 0:00:00

11 SLIDE DRYING: Temp.°C: 23.0, 23.0, 23.0, Time: 0:05:00
Final Manifold Cleaning: Yes, Ch.: 3

PROGRAM END

The protocol outlined above has been optimized for hybridization of fluorescently labeled cDNA (transcriptional profiling) and genomic DNA (comparative genomic hybridization) to arrays of cDNA and long oligonucleotides, using the Corning® Pronto!™ Universal Hybridization Kit. The protocol includes steps for both prehybridization and hybridization.

For further information about the Pronto! reagents, please visit **www.corning.com/lifesciences**. Contact Dr. Camilo Canel (207.985.5353, CanelC@corning.com), or, in Europe, Dr. Laurent Picard (31.20.655.7942, PicardL@corning.com), to request a program file (.hpr) to run this protocol on the Tecan hybridization stations. For information about the Tecan HS 4800 System, visit **www.tecan.com**.

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