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ProductInformation

STANDARD MICROARRAY SPOTTING SOLUTION

Product Number **M 1435**
Store at Room Temperature

TECHNICAL BULLETIN

Product Description

Standard Microarray Spotting Solution is designed to improve the consistency and surface properties of DNA samples deposited onto glass slides by direct contact micro-spotting technologies. The solution promotes good spot morphology and enhances DNA binding and hybridization signal. The spotting solution is supplied as a 2X concentrate and is recommended for use with aminopropylsilane and poly-L-lysine coated slides, and is compatible with amine-reactive slides containing aldehyde or epoxide functional groups.

Precautions and Disclaimer

Standard Microarray Spotting Solution is for laboratory use only. Not for drug, household or other uses.

Storage/Stability

Store the Standard Microarray Spotting Solution at room temperature. Samples should be prepared in a clean environment. Particles can interfere with the printing (arraying) process and can lead to background signal during detection. Touching the printing surface, except by the printer, should be avoided.

Procedure

DNA Printing

1. Dilute purified double-stranded DNA samples (0.1–1 µg/µl in water) or oligonucleotides (100–150 µM in water) with an equal volume of the Standard Microarray Spotting Solution.

2. Print slides according to arrayer manufacturer's or standard protocol.

3. If not used immediately, store printed slides desiccated at room temperature until ready for pre-treatment and hybridization.

4. Pre-treat, hybridize, and scan slides according to standard procedures.

Related Products

Product Name	Product No.
GenElute™ Mammalian Total RNA Kits	RTN-10 RTN-70 RTN-350
GenElute™ PCR Purification Kit	GEN-PCR
GenElute™ mRNA from Total RNA Kits	MRN-10 MRN-70
SigmaScreen Coated Slides for Microarrays	S 7934
Poly-L-Lysine Coated Slides for Microarrays	S 1313
ArrayHyb Hybridization Buffer	A 7718
ArrayHyb LowTemp Hybridization Buffer	A 3095
Microarray Hybridization Wash Pack	M 2185
Hybridization Water Bath (115V or 220V)	Z36,765-6 Z36,766-4
BioLink BLX UV Crosslinker (115V or 230V)	Z37,537-3 Z37,538-1
Belly-Dancer Orbital Shaker (115V or 220/240V)	Z36,760-5 Z36,761-3

References

1. Schena, M., et al., Parallel human genomic analysis: microarray-based expression monitoring of 1000 genes. Proc. Natl. Acad. Sci. USA, **93,** 10614-10619 (1996).

2. Schena, M., et al., Quantitative monitoring of gene expression patterns with a complementary DNA microarray. Science, **270,** 467-470 (1995).

3. Schena, M., ed., *Microarray Biochip Technology,* Eaton Publishing (Natick, MA: 2000). Product No. M 4309.

4. Schena, M., ed., *DNA Microarrays, A Practical Approach,* Oxford University Press (Oxford, England: 1999). Product No. D 6187.

Troubleshooting Guide

Problem	Cause	Solution
Spots appear smeared or as comets.	Inefficient pretreatment	When concentrated DNA (0.5 mg/ml) is spotted on the slide, only a fraction becomes bound to the surface. The remaining unbound DNA must be washed away. This is accomplished in a pretreatment procedure by washing the slides in solutions such as 0.5% SDS. This step removes unbound DNA from the spots and prevents the DNA from binding to the surrounding slide surfaces.
	DNA is too concentrated.	Print with less concentrated DNA samples.
	UV treatment not effectively immobilizing DNA .	Insure that a reliable UV light source (such as BioLink BLX UV Crosslinker) is utilized.
Irregular spot morphology	Deformed or contaminated spotting pins	Replace or clean spotting pins.
	Poor printing of DNA	Incomplete mixing of the DNA and the standard microarray spotting solution.
	Contamination in arrayed DNA	DNA must be cleaned properly prior to spotting. Silica matrix columns, such as the GenElute PCR DNA Purification Kit, are recommended for purification of the DNA.
Low signal	Inefficient binding of nucleic acids to the slide during printing	DNA must be cleaned properly prior to spotting. Silica matrix columns, such as the GenElute PCR DNA Purification Kit, are recommended for purification of the DNA.
	Probe was not labeled efficiently or has been exposed to light.	Check the probe for labeling efficiency. If poor label incorporation is observed, remake the probe. Protect labeled probes from exposure to light.

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