

Materials List for:

High-Density DNA and RNA microarrays - Photolithographic Synthesis, Hybridization and Preparation of Large Nucleic Acid Libraries

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Materials

Name	Company	Catalog Number	Comments
<i>Slide functionalization</i>			
Acetic acid>99.8%	Sigma	33209	For RNA deprotection
CNC router	Stepcraft	300 CK	
Ethanol absolute	VWR	1.07017.2511	For deprotection and functionalization
N-(3-triethoxysilylpropyl)-4-hydroxybutyramide	Gelest	SIT8189.5	Silanizing reagent
Nexterion Glass D microscope slides	Schott	1095568	
Polymax 1040	Heidolph		Orbital shaker
Proclean 507 Ultrasonic water bath	Ulsonix		To clean slides after drilling
Tickopur RW 77 Special Purpose Cleaner	Sigma	Z860086	To clean slides after drilling
<i>Microarray synthesis</i>			
0.25 M dicyanoimidazole in ACN	Biosolve	0004712402BS	Activator
0.7 XGA DMD	Texas Instruments		Digital Micromirror Device
20 mM I ₂ in pyridine/H ₂ O/THF	Sigma	L860020-06	Oxidizer
250 μm thick Chemraz 584 perfluoroelastomer	FFKM		Lower teflon gasket
2'-O-ALE RNA phosphoramidites	ChemGenes		
365 nm high-power UV-LED	Nichia	NVSU333A	
5'BzNPPOC DNA phosphoramidites	Orgentis		
5'NPPOC DNA phosphoramidites	FlexGen		
Acetonitrile	Biosolve	0001205402BS	For DNA synthesis
Amidite Diluent for DNA synthesis	Sigma	L010010	For dissolving phosphoramidites
Cleavable dT	ChemGenes		Base-sensitive monomer for library preparation
DMSO	Biosolve	0004474701BS	As exposure solvent
<i>DNA and RNA microarray deprotection</i>			
Ethylenediamine>99.5%	Sigma	3550	For deprotection
Expedite 8909	PerSeptive Biosystems		DNA synthesizer
Hydrazine hydrate 50-60% hydrazine	Sigma	225819	For RNA deprotection
Imidazole	Sigma	56750	

Industrial Strength lower-density PTFE tape	Gasoil		Thin, upper teflon gasket
Pyridine>99%	Sigma	P57506	For RNA deprotection
Triethylamine>99%	Sigma	T0886	For RNA deprotection
β-carotene	Sigma	C9750	For library preparation
<i>Hybridization and scanning</i>			
20x Sodium Saline Citrate	Roth	1054.1	
5'Cy3-labelled complementary strand	Eurogentec		For duplex hybridization
Biopur Safe-Lock microcentrifuge tube	Eppendorf		
BSA (10 mg/mL)	Promega	R3961	
EDTA molecular biology grade	Promega	H5031	
GenePix 4100A	Molecular Devices		Microarray scanner
Hybridization oven	Boekel Scientific	230500	
MES monohydrate	Sigma	69889	
MES sodium	Sigma	M3058	
NaCl>99.5%	Sigma	71376	
SecureSeal SA200 hybridization chamber	Grace BioLabs	623503	
Spectrafuge mini	Labnet	C1301	Microarray centrifuge
Tween-20 molecular biology grade	Sigma	P9416	
<i>Data extraction</i>			
Excel	Microsoft		For data extraction
MatLab	MathWorks		Microarray design
NimbleScan 2.1	Roche NimbleGen		
<i>Desalting and quantification</i>			
NanoDrop One Spectrophotometer	Thermo Scientific		
Toluene	Merck		
ZipTip C18	Millipore	ZTC18s008	Desalting pipet tips