PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Second-generation microarrays

ArticleInfo		
ArticleID	:	4047
ArticleDOI	:	10.1186/gb-spotlight-20010411-01
ArticleCitationID	:	spotlight-20010411-01
ArticleSequenceNumber	:	118
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001–04–11 OnlineDate : 2001–04–11
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

Jonathan B Weitzman
Email: jonathanweitzman@hotmail.com

Current microarray analysis uses 'chips' containing either 25-residue oligonucleotides synthesized by photolithography or cDNAs placed by robotic spotting. In the April Nature Biotechnology, Hughes *et al*. describe a microarray technique that exploits an ink-jet printing method and standard phosphoramidite chemistry (*Nature Biotechnology* 2001, **19:**342-347). The ink-jet synthesizer can deliver 25,000 phosphoramidite-containing microdroplets to a 25 x 75 mm glass slide. Hughes *et al*. examined a large range of parameters to define conditions for optimized specificity and sensitivity. They found that 60-mer oligonucleotides hybridized at 30-32% formamide gave the best results. The absolute detection limit was approximately 0.1 copies per cell equivalent. The ink-jet arrays were as effective as spotted cDNA microarrays. Moreover, Hughes *et al*. report that single carefully chosen 60-mer oligonucleotides can be preferable to arrays containing multiple oligonucleotides or cDNAs as they offer maximal specificity. The ink-jet technology provides a very flexible microarray system that can be experimentally optimized to detect low abundance mRNAs and spliced variants.

References

1. Expression monitoring by hybridization to high-density oligonucleotide arrays.

2. Quantitative monitoring of gene expression patterns with a complementary DNA microarray.

3. *Nature Biotechnology*, [http://biotech.nature.com]

4. Experimental annotation of the human genome using microarray technology.