

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

The human genome on a chip

ArticleInfo		
ArticleID	:	4851
ArticleDOI	:	10.1186/gb-spotlight-20031003-01
ArticleCitationID	:	spotlight-20031003-01
ArticleSequenceNumber	:	203
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	3
ArticleHistory	:	RegistrationDate : 2003-10-3 OnlineDate : 2003-10-3
ArticleCopyright	:	BioMed Central Ltd2003
ArticleGrants	:	
ArticleContext	:	130594411

Andrew Scott

Email: as@andrewscottweb.co.uk

The ability to analyze and manipulate the [human genome](#) has taken an impressive step forward with the [commercial launch](#) on October 2 of a microarray for analysis of the whole genome on a single chip.

The chip, from gene technology firm [Affymetrix](#), is about the size of a dime and carries over 1 million oligonucleotide probes, allowing analysis of the expression of nearly 50,000 RNA transcripts from the 30,000 or so genes in the human genome.

"The 'Human Plus' array represents a leap in array technology data capacity," said Trevor J. Nicholls, chief commercial officer at Affymetrix, in the Affymetrix press release.

"The idea of probing the human genome's expressed genes on a single chip is an exciting concept," Larry Thompson, spokesman for the US [National Human Genome Research Institute](#) (NHGRI), told us. He added: "The announcement of Affymetrix's new chip appears to be an important step toward that goal, but NHGRI is unable to comment on it until scientists have had an opportunity to work with the chip and observe its capabilities."

The powerful symbolism of analyzing the entire human genome on a single chip is undoubted. The practical advantages may be less dramatic but are still significant. "Before they had the genome on a couple of chips, but now they've got it on one chip, it does make things easier." Andrew Dearlove of the UK [Medical Research Council](#) (MRC) told us. He referred to the key advantages of savings in time and cost.

The MRC offer gene analysis services using a variety of such chips. On October 1, [MRC geneservice](#) announced its own latest [step forward](#), using another new Affymetrix chip to improve their gene mapping service. Overall, these developments are "bringing the researcher closer to finding their gene," Dearlove said.

The Affymetrix gene expression chip will soon be [challenged](#) in the marketplace by similar whole human genome chips being developed by other companies, including [Applied Biosystems](#) and [Agilent Technologies](#).

"We are on track to commercialize our product by the end of the year," Lori Murray of Applied Biosystems told us. Commenting on the forthcoming battle for market share, she said: "What's most important is the quality of data and the price... whoever commercializes first is not going to be the deciding factor."

For Agilent, Christina Maehr confirmed its own technology should also be released before the end of the year. Both the Agilent and Applied Biosystems chips are now undergoing final customer testing and evaluation. Maehr expects customers to wait to assess the merits of the various rival systems before making their choice.

She also emphasized significant differences between the rival "closed platforms," requiring specialized and expensive scanners to analyze the data, and an "open platform" of the type developed by Agilent, on which customers could use their own existing scanners.

References

1. Powledge TM: Human genome completed *Genome Biology*, April 15, 2003., [http://genomebiology.com/researchnews/default.asp?arx_id=gb-spotlight-20030415-01]
2. "Affymetrix announces commercial launch of single array for human genome expression analysis," Affymetrix news release, October 2, 2003., [http://www.corporate-ir.net/ireye/ir_site.zhtml?ticker=AFFX&script=410&layout=-6&item_id=454699]
3. Affymetrix, [<http://www.affymetrix.com/index.affx>]
4. National Human Genome Research Institute, [<http://www.genome.gov/>]
5. Medical Research Council (MRC), [<http://www.mrc.ac.uk/>]
6. MRC geneservice, [<http://www.hgmp.mrc.ac.uk/geneservice/index.shtml>]
7. Affymetrix GeneChip Human Mapping 10k Array Analysis, MRC geneservice DNA Services, [http://www.hgmp.mrc.ac.uk/geneservice/DNAservices/human_10K_SNP_genotyping.shtml]
8. Addonizio M: The great chip chase *The Scientist*, 17:49, September 8, 2003., [http://www.the-scientist.com/yr2003/sep/tools1_030908.html]
9. Applied Biosystems, [<http://www.appliedbiosystems.com>]
10. Agilent Technologies, [<http://www.agilent.com>]