



Affordable
Quality, Performance, Results

Human Whole Genome OneArray™ DNA Microarray

- Completes head-to-head with other platforms
- Easy, affordable Service Packages also available
- Exhibits high correlation with real-time PCR gene identification techniques
- 100% Satisfaction Guaranteed¹

Genome Content

Each microarray contains 32,050 oligonucleotides: 30,968 human genome probes + 1082 experimental control probes.

Each 60-mer oligo probe is designed to hybridize to a specific target gene described in the current public domain content validated by the Human Genome Sequencing Project.

Table 1 (right) provides a summary of the probe content of Human OneArray. The probe set annotation is updated approximately each 2 months with each UniGene build.

The most up-to-date annotation, GAL files, and probe sequences can be obtained at www.OneArray.com.

Table 1: Human OneArray Probe Content

Source	Probe Number
UniGene & RefSeq based (Total) ²	30,968
UniGene build #157 and/or RefSeq based with Entrez Gene ID including: -CGAP (Cancer Genome Anatomy Project) -BioCarta and KEGG (Kyoto Encyclopedia of Genes and Genomes) pathways	28,703
UniGene build #163 with Gene ID and experimentally selected	2,265
Oligonucleotide probe length	60-mer

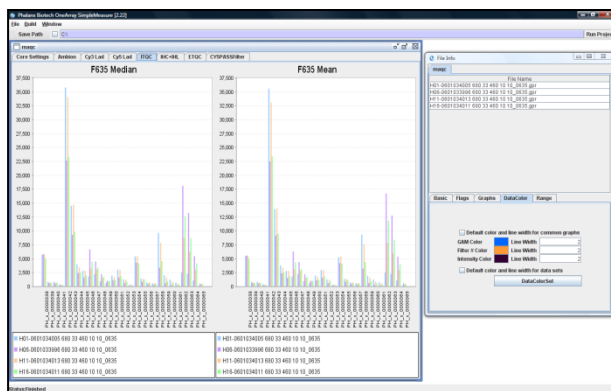
Human OneArray Control Features

There are 1,082 control probes built into Human OneArray that monitor the sample quality and hybridization process.

These control probes provide valuable information to ensure experiments are done correctly, resulting in higher quality results for analysis.

Figure A, right, shows the control feature data analysis of OneArray using our free SimpleMeasure software.

For more detailed control probe information, visit www.OneArray.com.



1. Please contact us for details.

2. Human OneArray is guaranteed to print 98% or more of the total probe content.

How Does OneArray Compare to the Leading Microarray Platforms?

OneArray Data Quality

Human OneArray has been tested under the same experimental conditions as those used in the original Microarray Quality Control (MAQC) project.³ The FDA-led project was initiated to, in part, provide a standard by which all microarray platforms could be compared. Four standard RNAs were tested on each platform and lists of differentially expressed genes were generated according to the manufacturers' protocols. The data show OneArray yields high quality data that is comparable to the leading commercial platforms included in the original study.

Repeatability of OneArray is Comparable to Other Platforms. The MAQC project evaluated repeatability and reproducibility of several platforms by measuring the coefficient of variation (CV) of the signal magnitude values for intra-site replicates. Human OneArray shows CV values <8%, showing excellent array-to-array consistency comparable to other platforms.

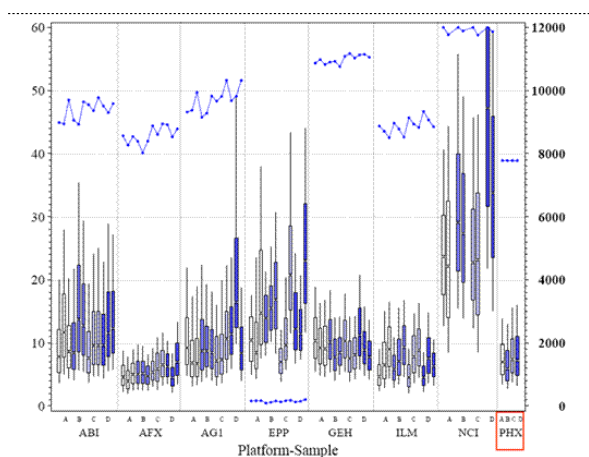


Figure B. Repeatability of Microarray Platforms. ABI=Applied Biosystems, AFX=Affymetrix, AGI=Agilent, EPP=Eppendorf, GEH=GE Healthcare, ILM=Illumina, NCI=National Cancer Institute, PHX=Phalanx Biotech (red box).

OneArray Detects the Same Gene Expression as Other Platforms.

One of the goals of the MAQC study was to evaluate interplatform data concordance. This can be assessed by determining whether differences between two samples can be detected on each microarray platform. Figure C, below, shows the intraplatform data concordance of differentially expressed genes using two standard RNAs as the samples.⁴

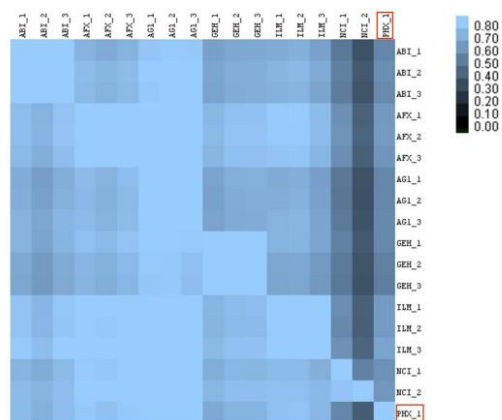


Figure C. Comparison of Gene List Overlap. Comparison of the gene lists from all platforms tested (numbers following the platform abbreviation indicate independent test sites). Lighter colors indicate a higher degree of concordance.

OneArray Gene Coverage

OneArray Gene Coverage Matches other Long-Oligo Arrays. In an effort to investigate how to generate a more complete probe set, a probe annotation pipeline has been developed using the whole genome as a reference set. The annotation pipeline was used to evaluate long-oligonucleotide probe sets from several different sources. Probes were assigned to six different categories based on their alignment to the whole genome. Analysis of available human gene expression microarrays indicates increased probe density does not correlate with increased gene coverage or interrogation power, and Phalanx Biotech Human OneArray provides coverage comparable to other commercially available arrays.

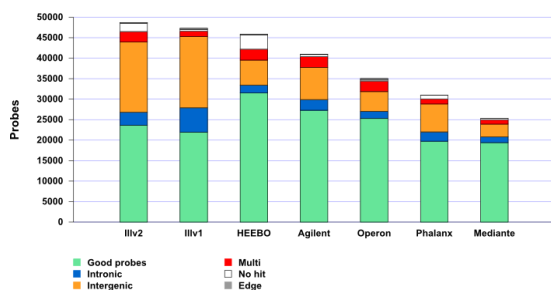


Figure D. Probe Set Breakdown. The break down for the probe sets investigated indicates sets with high probe density have a large amount of probe space dedicated to intergenic material (orange).

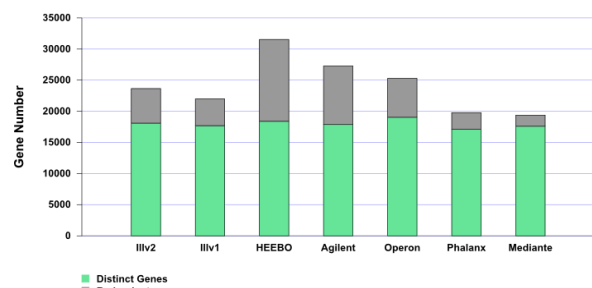


Figure E: Interrogation Power. Further analysis indicates a high level of redundancy in gene coverage. High probe density does not correlate with good gene coverage.

3. MAQC Consortium (2006) *Nat Biotech* 24(9): 1151-1161. For more information on the MAQC Project, please visit <http://www.fda.gov/>. For a complete report of the performance of OneArray, please visit <http://www.onearray.com/Power/Power.html>.

4. The two RNAs used for this comparison were Sample A, Stratagene Universal Human Reference RNA, and Sample B, Ambion Human Brain Reference RNA.