

# GeneChip® Human Genome U133 Set

## Comprehensive coverage of all well-substantiated genes in the Human Genome

- The GeneChip® Human Genome U133 Set (HG-U133A and HG-U133B) is comprised of two microarrays containing over 1,000,000 unique oligonucleotide features covering more than 39,000 transcript variants which in turn represent greater than 33,000 well-substantiated human genes. Exclusively from Affymetrix, this powerful set allows you to reproducibly examine the quantitative and qualitative expression of most genes in the human genome, and was designed using the recently published and publicly available draft of the human genome.



## Applications

In a single experiment with this versatile two-array set, you can examine the expression of genes with solid evidence of transcription and gain insight into functional gene networks.

The following are examples of specific applications for this array set:

- **Tissue and Cell Type-Specific Gene Expression**

The morphological differences in tissues and cells can now be better defined using global transcriptional expression analysis. The GeneChip® Human Genome U133 Set lets you globally study

over 33,000 human genes to identify those that are uniquely expressed in specific tissues or cell lines.

- **Inducible Gene Expression**

In addition, this array set enables you to investigate how cells and tissues respond to changes to their environment such as heat shock, interactions with other cells, exposure to chemical compounds, exposure to growth factors, or other signaling molecules.

- **Gene Expression During Differentiation**

This array set can help you better understand human cell differentiation

as you determine which transcripts are increased or decreased during distinct stages in cellular differentiation.

- **Gene Expression During Tumorigenesis**

The HG-U133 Set may be used to determine what genes are uniquely expressed during different stages of tumorigenesis. Use this information to molecularly characterize and classify tumor types.

## Array Profile

Sequences used in the design of the array were selected from GenBank, dbEST, and RefSeq. Sequence clusters were created from Build 133 of UniGene (April 20, 2001) and refined by analysis and comparison with a number of other publicly available databases including the Washington University EST trace repository and the University of California, Santa Cruz golden-path human genome database (April 2001 release). In addition, ESTs were analyzed for untrimmed low-quality sequence information, correct orientation, false priming, false clustering, alternative splicing and alternative polyadenylation.

### New Normalization Controls

The HG-U133 Set includes a set of human maintenance genes to facilitate the normalization and scaling of array experiments. This set of genes is represented on both arrays, and serves as a tool to normalize and scale your data prior to performing data comparisons. These normalization genes show consistent levels of expression over a diverse set of tissues.

### Relationship to GeneChip® Human Genome U95 Arrays.

The HG-U133A Array represents the vast majority of the genes featured on its predecessor, the HG-U95A Array. Similarly, a large percentage of the content on the HG-U95B, HG-U95C,

### Critical Specifications:

|                               |  |
|-------------------------------|--|
| Number of Arrays in Set:      | Two  |
| Number of transcripts:        | ~ 39,000   |
| Number of genes:              | ~ 33,000   |
| Number of probe sets:         | >45,000  |
| Feature size:                 | 18 µm  |
| Array format:                 | Standard Format                                  |
| Oligonucleotide probe length: | 25 mers  |
| Probe pairs/sequence:         | 11   |
| Control sequences included:   |  |
| Hybridization Controls:       | <i>bioB, bioC, bioD</i> and <i>cre</i>           |
| Poly-A Controls:              | <i>dap, lys, phe</i> and <i>thr</i>              |
| Normalization Control Set:    | 100 probe sets replicated on both A and B arrays |
| Housekeeping/Control Genes:   | GAPDH, beta-Actin, ISGF-3 (STAT1)                |
| Detection sensitivity:        | 1:100,000*                                       |

\*As measured by detection of pre-labeled transcripts derived from human cDNA clones in a complex human background.

### Ordering Information:

| Part No. | Name                  | Description                               |
|----------|-----------------------|---|
| 900370   | Human Genome U133 Set | Contains 5 HG-U133A and 5 HG-U133B Arrays |
| 900366   | Human Genome U133A    | Contains 5 HG-U133A Arrays                |
| 900367   | Human Genome U133A    | Contains 30 HG-U133A Arrays               |
| 900368   | Human Genome U133B    | Contains 5 HG-U133B Arrays                |
| 900369   | Human Genome U133B    | Contains 30 HG-U133B Arrays               |

HG-U95D, and HG-U95E arrays is represented on the HG-U133 Set. Due to the dynamic nature of the public databases, probe sets for these sequences will not be identical and in some cases will be represented by a completely new probe set. As a result, data generated with different versions of the human arrays may not produce concordant results. For more information, please contact Affymetrix technical support at 1-888-DNA-CHIP.

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Part No. 701098 Rev 2

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