



## Affymetrix® HG-U133 Plus PM Array Strip

### Intended Use

The Affymetrix® HG-U133+ PM Array Strip is designed for low and medium-throughput microarray expression analysis and enables researchers to perform studies with minimum hands-on processing time per sample. Each array strip consists of 4 microarrays and is offered as a part of the automated solution from Affymetrix including array strip hybridization, washing, staining and scanning on the GeneAtlas™ Instrument.

Each microarray on the Affymetrix HG-U133+ PM Array Strip contains the same number of probe sets as the industry-standard GeneChip® Human Genome U133 Plus 2.0 cartridge array. This enables researchers to take a whole genome approach to expression profiling and smoothly scale up to process large numbers of samples.

Two critical design changes are found on the Affymetrix HG-U133+ PM Array Strip:

1. Only Perfect Match (PM) probes from the cartridge design were retained while Mismatch (MM) probes were removed.
2. Empirical data were used to select the best-performing probes resulting in reducing the number of PM probes; 42,461 probe sets were reduced from eleven to nine probes and another six probe sets were reduced from eleven to ten; 12,208 probe sets remained unchanged.

Sequences used in the design of the arrays were selected from GenBank®, dbEST, and RefSeq. The majority of sequence clusters were created from the UniGene database (Build 133, 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). An additional set of sequence clusters were created from Build 159 of UniGene (January 25, 2003) and refined by analysis and comparison with a number of other publicly available databases, including the Washington University EST trace repository and the NCBI human genome assembly (Build 31). Sequences were further analyzed for correct orientation, false priming, false clustering, alternative splicing, and alternative polyadenylation.

Identical to the cartridge array manufacturing process, the oligonucleotide probes on Affymetrix HG-U133+ PM Array Strips are synthesized *in situ* using Affymetrix' photolithographic process. Affymetrix arrays strips are for research use only and not intended for use in diagnosis of disease.

Please refer to [www.affymetrix.com](http://www.affymetrix.com) for a complete list of supporting documentation for procedures regarding target preparation, target hybridization, washing, staining, and scanning.

### Library Files

Library files contain information about the probe array design characteristics, probe use and content, and scanning and analysis parameters. These files are unique for each probe array type. Additional information can be located under the specific array product on the Affymetrix web site at [www.affymetrix.com/support/technical/libraryfilesmain.affx](http://www.affymetrix.com/support/technical/libraryfilesmain.affx).

### Critical Specifications

Feature Size	8 µm
Probes/Sequence	9 to 11 Perfect Match Probes
Hybridization Controls	<i>bioB, bioC, bioD, cre</i>
Poly-A Controls	<i>dap, lys, phe, thr</i>
Normalization Controls	100 probe sets
Housekeeping/Control Genes	<i>GAPDH, beta-Actin</i>
Hybridization Volume	120 µL

### Reagents, Instrumentation and Software Required

1. GeneChip® 3' IVT Express Kit\*
2. GeneAtlas™ Hybridization, Wash, and Stain Kit for 3' IVT Arrays
3. GeneAtlas™ System

\* The GeneAtlas™ 3' IVT protocol is designed to get twice as many reactions from the GeneChip 3' IVT Express Kit than when using the cartridge protocol. The 10 reaction GeneChip 3' IVT Express Kit will produce 20 reactions on GeneAtlas, and the 30 reaction kit will produce 60 reactions on GeneAtlas.

### Ordering Information

Affymetrix array strip kits include hybridization, scan, and stain trays for use with the GeneAtlas Instrument.

P/N	Product Name	Description
901569	Affymetrix® U133 Plus PM Array Strip Kit <sup>1</sup>	1 Array Strip Kit (4 Arrays)
901579	Affymetrix® U133 Plus PM Array Strip and GeneChip® 3' IVT Express Kit Bundle	5 Array Strip Kits 10 Rxn (sufficient for 20 Rxn on GeneAtlas)
901228	GeneChip® 3' IVT Express Kit	10 Rxn (sufficient for 20 Rxn on GeneAtlas)
901229	GeneChip® 3' IVT Express Kit	30 Rxn (sufficient for 60 Rxn on GeneAtlas)
901531	GeneAtlas™ Hybridization, Wash, and Stain Kit for 3' IVT Arrays	60 Rxns

1. Each Array Strip Kit contains: 1 Array Strip, 3 Hybridization Trays, 1 Imaging Tray, 1 Wash A Tray and 1 Wash B Tray for the GeneAtlas Instrument.

Affymetrix® products can be purchased directly from Affymetrix in the United States, and many European and Asian countries. For all other territories, please view a list of our distribution partners, which can be located at [www.affymetrix.com/site/contact/index.affx](http://www.affymetrix.com/site/contact/index.affx).

### Precautions

1. AFFYMETRIX ARRAY STRIPS ARE FOR RESEARCH USE ONLY; NOT FOR DIAGNOSTIC PROCEDURES.
2. Avoid microbial contamination, which may cause erroneous results.
3. WARNING: All biological specimens and materials with which they come into contact should be handled as if capable of transmitting infection and disposed of with proper precautions in accordance with federal, state, and local regulations. This includes adherence to the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) for blood-derived and other samples governed by this act. Never pipet by mouth. Avoid specimen contact with skin and mucous membranes.
4. CAUTION: Exercise standard precautions when obtaining, handling, and disposing of potentially carcinogenic reagents.
5. Exercise care to avoid cross-contamination of samples during all steps of this procedure, as this may lead to erroneous results.
6. Use powder-free gloves whenever possible to minimize introduction of powder particles into sample or probe array strips.

## Storage, Handling and Stability

The Affymetrix array strips should be stored at 2° to 8°C and must not be frozen. Refer to the expiration date on the package label. Do not use probe arrays or reagents after the expiration date.

### When Handling the Array Strip

Always remove the Array Strip from the pouch with gloved hands using caution not to damage or scratch the array surface.

### Array Strip Consumables

Figure 1. Affymetrix® Array Strip

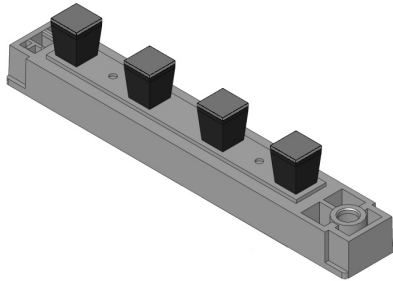


Figure 2. GeneAtlas™ Hybridization Tray

Clear Plastic

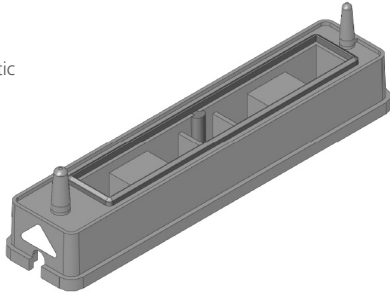


Figure 3. GeneAtlas™ Wash B Tray

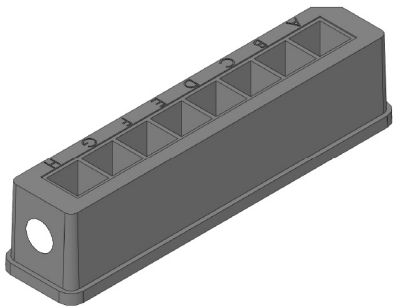


Figure 4. GeneAtlas™ Imaging Tray

Black Plastic

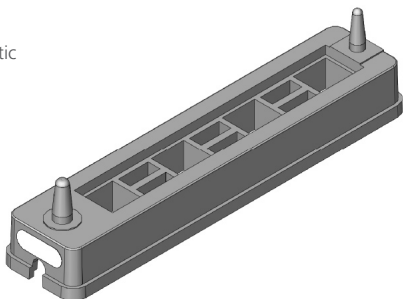
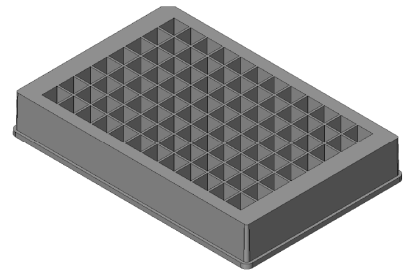


Figure 5. GeneAtlas™ Wash A and Stain Tray



## Contact Information

### Affymetrix, Inc.

3420 Central Expressway  
Santa Clara, CA 95051 USA  
E-mail: support@affymetrix.com  
Tel: 1-888-362-2447 (1-888-DNA-CHIP)  
Fax: 1-408-731-5441

### Affymetrix UK Ltd

Voyager, Mercury Park,  
Wycombe Lane, Wooburn Green,  
High Wycombe HP10 0HH  
United Kingdom  
E-mail: supporteurope@affymetrix.com  
UK and Others Tel: +44 (0) 1628 552550  
France Tel: 0800919505  
Germany Tel: 01803001334  
Fax: +44 (0) 1628 552585

### Affymetrix Japan, K. K.

Mita NN Bldg, 16 Floor  
4-1-23 Shiba, Minato-ku  
Tokyo 108-0014, Japan  
E-mail: supportjapan@affymetrix.com  
Tel: +81-(0)3-5730-8200  
Fax: +81-(0)3-5730-8201

Please visit our web site for international distributor contact information  
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