



Affymetrix® Rat Gene 1.1 ST Array Strip

Intended Use

The Affymetrix® Rat Gene 1.1 ST 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 four microarrays and contains the same probe sets as the GeneChip® Rat Gene 1.0 ST Cartridge Array. The Rat Gene 1.1 ST Array Strip is offered as a part of the automated solution from Affymetrix including array strip hybridization, washing, staining and scanning on the GeneAtlas™ Instrument.

Each array is comprised of more than 720,000 unique 25-mer oligonucleotide probes that interrogate over 27,000 genes. Discovery content, such as transcript regions supported by more speculative sources including Expressed Sequence Tags (ESTs) and gene predictions, are not interrogated by the Affymetrix Rat Gene 1.1 ST Array Strips. Design of the array was based on sequences and gene annotations obtained from the following sources and used to group probes from the GeneChip® Rat Exon 1.0 ST Array into new gene-level probe sets. In some cases these sequences were used to select additional new probes.

- The November 2004 rat genome sequence (UCSC m4, Baylor HGSC v3.4).
- RefSeq NM (curated and provisional; not predicted) mRNA sequences (10,084 sequences) current to April 3, 2007.
- Genbank® complete coding sequence mRNAs (12,547 sequences) current to January 25, 2007.
- Rat Ensembl transcripts current to April 3, 2007 (37,695 transcripts).
- Syntenically mapped full-length mRNAs and RefSeq NMs from human (66,206 sequences) and mouse (49,516 sequences).

Identical to the cartridge array manufacturing process, the oligonucleotide probes on Affymetrix Rat Gene 1.1 ST 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 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.

Reagents, Instrumentation and Software Required

1. Ambion® WT Expression Kit
2. GeneChip® WT Terminal Labeling Kit
3. GeneAtlas™ System

Critical Specifications

| | |
|--|---|
| Feature Size | 5 µm |
| Total Number of Distinct Probes | 722,254 |
| Oligonucleotide Probe Length | 25-mer Probes |
| Required Orientation of Labeled Targets to be Hybridized to the Array | Sense Target |
| Resolution (number of probes per gene) | 26 (median) |
| Estimated Number of Genes | 27,342 |
| Gene-level Probe Sets with ENSEMBL Support | 26,008 |
| Gene-level Probe Sets with Putative Full-length Transcript Support (GenBank® and RefSeq) | 9,916 |
| Hybridization Volume | 120 µL |
| Positive Controls (constitutively expressed genes) | 399 putative exon-level probe sets from putative constitutive genes |
| Negative Controls | 1,153 putative intron-level probe sets from putative constitutive genes |
| Hybridization Controls | <i>bioB</i> , <i>bioC</i> , <i>bioD</i> , <i>creX</i> |
| Background Probes | Antigenomic Set |
| Poly-A Controls | <i>dap</i> , <i>lys</i> , <i>phe</i> , <i>thr</i> , <i>trp</i> |
| Library Files | RaGene-1_1-st-v1 (or newer) |

Ordering Information

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

| P/N | Product Name | Description |
|---------|--|------------------------------|
| 901627 | Affymetrix® Rat Gene 1.1 ST Array Strip Kit ¹ | 1 Array Strip Kit (4 Arrays) |
| 4411973 | Ambion® WT Expression Kit ² | 10 Rxns |
| 900670 | GeneChip® WT Terminal Labeling Kit | 10 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.

2. Available for purchase at www.Ambion.com.

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.

Precautions

1. AFFYMETRIX ARRAY STRIPS ARE FOR RESEARCH USE ONLY. NOT FOR USE IN 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

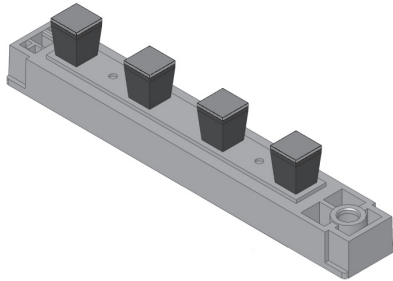


Figure 2. GeneAtlas™ Hybridization Tray

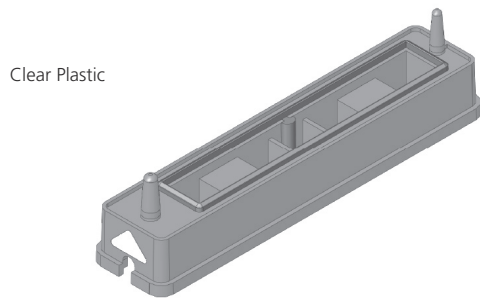


Figure 3. GeneAtlas™ Wash B Tray

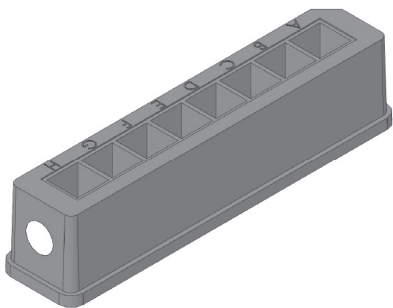


Figure 4. GeneAtlas™ Imaging Tray

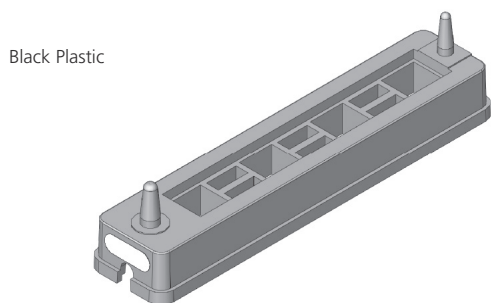
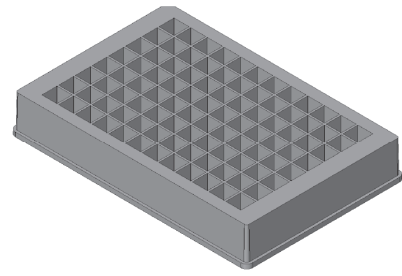


Figure 5. GeneAtlas™ Wash A and Stain Tray



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