



## Package Insert

# GeneChip® Rat Expression Set 230

## Intended Use

The GeneChip® Rat Expression Set 230 (Rat 230) is made up of two GeneChip arrays comprised of over 31,000 probe sets and 681,012 distinct oligonucleotide features covering over 30,200 transcripts and variants, including over 28,000 well substantiated rat genes. Sequences used in the design of the array were selected from GenBank®, dbEST, and RefSeq. The sequence clusters were created from the UniGene database (Build 99, June 2002) and then refined by analysis and comparison with the publicly available draft assembly of the rat genome from the Baylor College of Medicine Human Genome Sequencing Center (June 2002). The GeneChip Rat Expression Array 230A includes representation of the RefSeq database sequences and probe sets related to sequences previously represented on the GeneChip Rat Genome U34A (RG-U34A) Array. The GeneChip Rat Expression Array 230B primarily contains probe sets representing refined EST clusters.

Oligonucleotide probes are synthesized *in situ* on the arrays. Eleven pairs of oligonucleotide probes are used to measure the level of transcription of each sequence represented on the GeneChip Rat Expression Set 230.

As mentioned above, the set of sequences represented on the Rat 230A Array significantly overlaps the sequences represented on the RG-U34A Array. However, the probe sets for these sequences may not be identical and, in some cases, will be represented by a completely new probe set. This difference is primarily due to the dynamic nature of public databases and, as a result, data generated with different versions of the rat arrays may not always produce concordant results.

GeneChip probe arrays are for research use only and not intended for use in diagnosis of disease. Please visit [www.affymetrix.com](http://www.affymetrix.com) for a complete list of supporting documentation including procedures regarding target preparation, target hybridization, fluidics station setup, probe array scan, and data analysis.

## Instrumentation and Software Required

1. GeneChip® Scanner 3000 enabled for High-Resolution Scanning\*
2. GeneChip® Command Console® Software (AGCC)
3. GeneChip® Fluidics Station

\*GeneChip Scanner 3000 High-Resolution Update is standard on all instruments shipped starting in September 2003 with serial number series 502. Previous versions, serial number series 501, will require the 00-0110 GeneChip Scanner 3000 High-Resolution Update to be installed.

## Critical Specifications

Number of Arrays in Set	2
Feature Size	18 µm
Probe Pairs/Sequence	11
Array Format	64
Hybridization Controls	<i>bioB</i> , <i>bioC</i> , <i>bioD</i> , and <i>cre</i>
Poly-A Controls	<i>dap</i> , <i>lys</i> , <i>phe</i> , and <i>thr</i>
Normalization Controls	100 probe sets represented on both A and B arrays
Housekeeping Controls	GAPDH, beta-Actin, hexokinase 1
Hybridization Volume	200 µL. The total fill volume of the cartridge is 250 µL.
Fluidics Protocol	EukGE-WS2
Library Files	Rat 230A, Rat 230B

## Accessory Files

### Fluidics

The Fluidics Script used depends on the labeling protocol, hybridization and stain reagents used. Refer to the Fluidics Script Support page to determine the appropriate fluidics protocol for this array, GeneChip® instrument system, and reagents used. The Fluidics Scripts can be downloaded from the following URL: [www.affymetrix.com/support/technical/fluidics\\_scripts.affx](http://www.affymetrix.com/support/technical/fluidics_scripts.affx).

### 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 the following URL: [www.affymetrix.com/index.affx](http://www.affymetrix.com/index.affx).

### Mask Files

The Rat Set 230 includes a set of rat maintenance genes to facilitate the normalization and scaling of array experiments<sup>1</sup>. This set of genes is represented on both arrays, and serves as a tool to normalize or scale your data prior to performing data comparison. This set of normalization genes shows consistent levels of expression over defined sample sets. Mask files enabling the use of these probe sets for normalization and scaling are available on the Affymetrix web site at the following URL: [www.affymetrix.com/support/technical/mask\\_files.affx](http://www.affymetrix.com/support/technical/mask_files.affx).

### Comparison Spreadsheets

Comparison Spreadsheets are designed to assist in understanding the relationship between the data generated using different, but related, GeneChip expression probe arrays. Comparison Spreadsheets are available on the Affymetrix web site at the following URL: [www.affymetrix.com/support/technical/comparison\\_spreadsheets.affx](http://www.affymetrix.com/support/technical/comparison_spreadsheets.affx).

## Precautions

1. GENECHIP PROBE ARRAYS 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 cartridges.

1 Affymetrix would like to acknowledge Gene Logic Inc. as the source of information that led Affymetrix to the determination of algorithm used in the selection of the genes included in the Normalization Control Set.

## Ordering Information

P/N	Product Name	Description
<b>Arrays</b>		
511036	GeneChip® Rat Expression Array 230A	40 ± 5 Arrays
511037	GeneChip® Rat Expression Array 230B	40 ± 5 Arrays
The GeneChip Rat Expression Set 230 is part of the Made-to-Order Program. Made-to-Order Arrays are ordered in whole lots. The lot size for the GeneChip Rat Expression Array 230A and 230B is 40 ± 5 arrays.		
<b>Supporting Products</b>		
901228 901229	GeneChip® 3' IVT Express Kit	Sufficient for 10 Reactions Sufficient for 30 Reactions
900720	GeneChip® Hybridization, Wash, and Stain Kit <sup>1</sup>	Sufficient for 30 Reactions

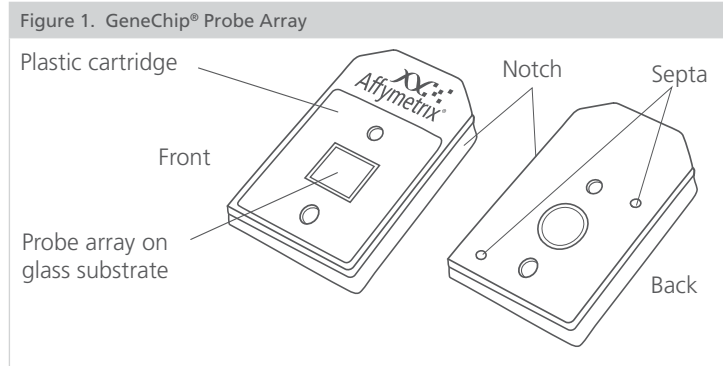
1. Each kit contains one (1) Hybridization Module, one (1) Stain Module, three (3) bottles of Wash Buffer A and one (1) bottle of Wash Buffer B, sufficient for 30-reactions. Individual kit components may be ordered separately.

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## Storage, Handling and Stability

The GeneChip probe array consists of a square glass substrate mounted in a plastic cartridge (Figure 1). The glass contains an array of oligonucleotides that, when mounted, is on the inner glass surface. A chamber in the plastic housing directly under the glass acts as a reservoir where hybridization and washing occur.

Although the inner glass surface of the probe array is protected, any contamination or scratches on the outer surface of the glass can compromise the accuracy of the scan. Avoid touching the surface of the glass with your fingers. Skin oils and other substances, such as lotions or ink, can fluoresce. If the surface of the glass is noticeably dirty, it can be carefully cleaned with a non-abrasive laboratory tissue.



The GeneChip® probe arrays should be stored at 2° to 8°C. Refer to the expiration date on the package label. Do not use probe arrays or reagents after the expiration date.

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## Patents

Products may be covered by one or more of the following patents: U.S. Patent Nos. 5,445,934; 5,744,305; 5,945,334; 6,140,044; 6,261,776; 6,291,183; 6,346,413; 6,399,365; 6,420,169; 6,551,817; 6,610,482; 6,733,977; 6,955,915 and D430,024 and other U.S. or foreign patents. Products are manufactured and sold under license from OGT under 5,700,637 and 6,054,270.

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