

## GeneChip® HT PM Array Plate System for Human, Mouse, and Rat

Scalable expression profiling and proven performance from the industry standard



**The GeneChip® HT PM Array Plate System provides comprehensive coverage of the transcribed human, mouse, and rat genomes in a convenient configuration that enables you to interrogate 16, 24, or 96 distinct samples per plate.**

**With the GeneChip HT PM Array Plate System, you'll be able to simplify the processing of large numbers of samples in parallel, increasing productivity and efficiency.**

### Introduction

The GeneChip® High-throughput (HT) Perfect Match (PM) Array Plate System for human, mouse, and rat offers the same industry-standard content as GeneChip® cartridge arrays in a flexible and scalable format, enabling increased productivity and efficiency. GeneChip HT PM Array Plates are available in 16-, 24-, and 96-array plate configurations so you can simplify the processing of multiple samples and microarrays in parallel while leveraging the industry's most widely cited expression array designs.

GeneChip HT PM Array Plates demonstrate extremely high performance, with strong signal and fold change correlation to previous plate and cartridge designs.

### Coverage

GeneChip HT PM Array Plates utilize the same content as the corresponding GeneChip cartridge arrays and have demonstrated high levels of backwards compatibility. With GeneChip HT PM Array Plates, you can perform comprehensive analysis of genome-wide expression on a single array and still leverage the thousands of publications and publicly available data sets produced on the corresponding cartridge arrays.

The GeneChip® HT HG-U133+ PM Array Plate:

- Utilizes the same content as the GeneChip® Human Genome U133 Plus 2.0 Array cartridge
- Analyzes the relative expression level of more than 47,000 transcripts and variants, including more than 38,500 wellcharacterized genes and UniGenes
- Provides whole-genome coverage of the transcribed human genome on a single array in 16-, 24-, and 96-array configurations
- Includes more than 54,000 probe sets and 1.3 million distinct oligonucleotide features

The GeneChip® HT MG-430 PM Array Plate:

- Utilizes the same content as the GeneChip® Mouse Genome 430 2.0 Array cartridge
- Provides whole-genome coverage of the transcribed mouse genome on a single array in 16-, 24-, and 96-array plate configurations
- Includes 45,000 probe sets to analyze the expression level of more than 39,000 transcripts and variants from more than 34,000 well-characterized mouse genes

The GeneChip® HT RG-230 PM Array Plate:

- Utilizes the same content as the GeneChip® Rat Genome 230 2.0 Array cartridge
- Provides whole-genome coverage of the transcribed rat genome on a single array in 16-, 24-, and 96-array plate configurations
- Includes more than 31,000 probe sets representing approximately 28,700 well-substantiated rat genes

GeneChip HT PM Array Plates include an important design change: the removal of mismatch probes (MM) originally used for background normalization. Due to the popularity of probe set summarization algorithms such as RMA that do not use mismatch (MM) probes, only the perfect match probes (PM) were retained.

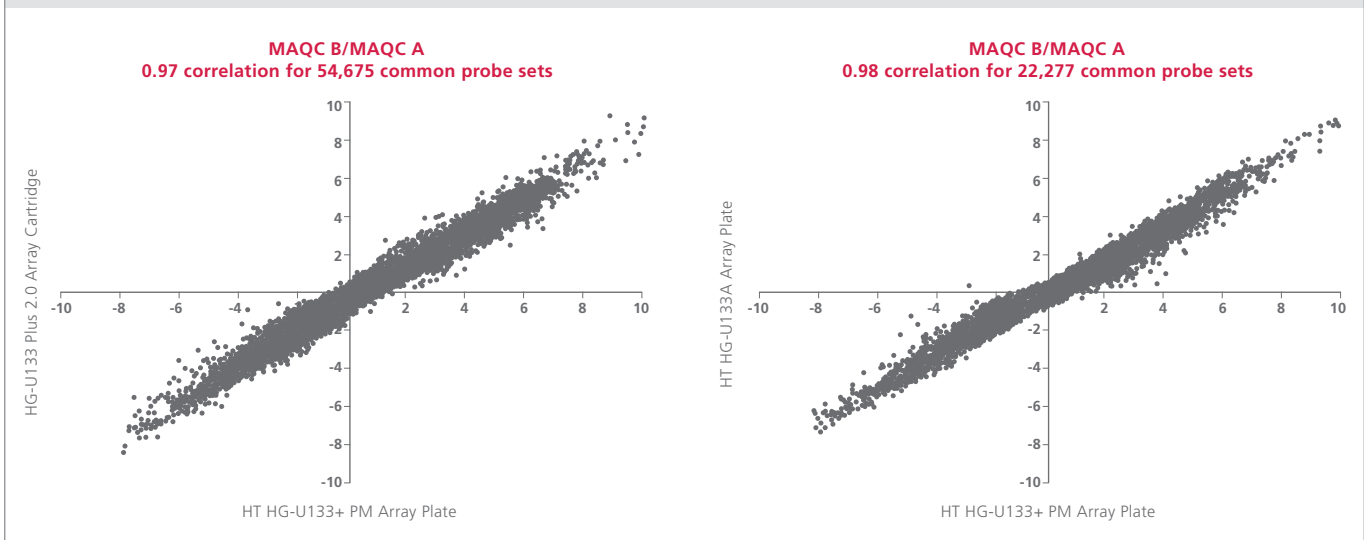
On the human array, a subset of PM probes was also removed based on empirical data identifying the best-performing probes for each probe set. For 42,461 probe sets, the number of PM probes was reduced from 11 to 9 probes, and another six probe sets were reduced from 11 to 10.

## Performance

GeneChip HT PM Array Plates demonstrate comparable performance and strong concordance with corresponding cartridge designs and previous-generation array plates (see the Affymetrix Technical Note, Performance and Validation of GeneChip® HT Human, Mouse, and Rat PM Array Plates). A Latin square spike-in experiment demonstrated comparable performance with the same high sensitivity and reproducibility for all three array types. Strong signal and fold change correlation was observed, suggesting a high level of backwards compatibility.

As shown in Figure 1, strong correlation was seen when comparing the 54,675 common probe sets shared between the GeneChip HT HG-U133+ PM Array Plate and the GeneChip HG-U133 Plus 2.0 Array cartridge (left) and the 22,277 common probe sets shared between the GeneChip HT HG-U133+ PM Array Plate and the GeneChip HT HG-U133A Array Plate (right). Mouse and rat data (not shown) demonstrated comparable levels of backwards compatibility.

**Figure 1:** Fold change correlation for HT HG-U133+ PM Array Plates versus HG-U133 Plus 2.0 Array cartridges (54,675 common probe sets) and HT HG-U133A Array Plates (22,277 common probe sets) using MAQC A and B samples. Scatter plots represent median MAQC B/MAQC A signals for each array type. The high correlation coefficients indicate that similar biology is being observed.



## Specifications

	GeneChip® HT HG-U133+ PM Array Plate	GeneChip® HT MG-430 PM Array Plate	GeneChip® HT RG- 230 PM Array Plate
Feature size	8 µm	8 µm	8 µm
Number of probe sets	>54,000	>45,000	>31,000
Probes per sequence	9-11	11	11
Available formats	16, 24-, and 96- array plates	16-, 24-, and 96- array plates	16-, 24-, and 96- array plates
Hybridization controls	bioB, bioC, bioD, cre	bioB, bioC, bioD, cre	bioB, bioC, bioD, cre
Poly-A controls	dap, lys, phe, thr	dap, lys, phe, thr	dap, lys, phe, thr
Normalization controls	100 probe sets	100 probe sets	100 probe sets
Housekeeping/control genes	GAPDH, beta- Actin	GAPDH, beta- Actin	GAPDH, beta- Actin

## Ordering information

Part Number	Description
<b>Human</b>	
901433	GeneChip® HT HG-U133+ PM 16-Array Plate Kit
901261	GeneChip® HT HG-U133+ PM 24-Array Plate Kit
901262	GeneChip® HT HG-U133+ PM 96-Array Plate Kit
901265	GeneChip® HT HG-U133+ PM 96-Array Plate Kit and GeneChip® HT 3' IVT Express Kit Bundle (96 reactions)
<b>Mouse</b>	
901434	GeneChip® HT MG-430 PM 16-Array Plate Kit
901257	GeneChip® HT MG-430 PM 24-Array Plate Kit
901258	GeneChip® HT MG-430 PM 96-Array Plate Kit
901266	GeneChip® HT MG-430 PM 96-Array Plate Kit and GeneChip® HT 3' IVT Express Kit Bundle (96 reactions)
<b>Rat</b>	
901435	GeneChip® HT RG-230 PM 16-Array Plate Kit
901259	GeneChip® HT RG-230 PM 24-Array Plate Kit
901260	GeneChip® HT RG-230 PM 96-Array Plate Kit
901264	GeneChip® HT RG-230 PM 96-Array Plate Kit and GeneChip® HT 3' IVT Express Kit Bundle (96 reactions)

Plate kits include all wash, stain, and scan trays and covers required for use on the GeneTitan™ Instrument.

## Related products

Part Number	Description
901253	GeneChip® HT 3' IVT Express Kit 96 reactions
901225	GeneChip® HT 3' IVT Express Kit 4 x 24 reactions
901386	Consumable Wash and Stain Tray Kit for GCAS (contains 5 HT Wash Trays and 4 HT Stain Trays)*
901228	GeneChip® 3'IVT Express Kit 10 reactions
901229	GeneChip® 3'IVT Express Kit 30 reactions

\*This kit is only required to use HT PM Array Plates on the GeneChip® Array Station (GCAS) and is not needed for use with the GeneTitan™ Instrument



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