GeneChip™ HT HG-U133 Plus PM Array Plate

Catalog Numbers 901433, 901261, and 901262

Doc. Part No. 702719 **Pub. No.** MAN0017678 **Rev.** A.0

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **thermofisher.com/support**.

Product use

The Applied Biosystems™ GeneChip™ HT HG-U133 Plus PM Array Plate is designed for medium- and high-throughput microarray expression analysis and enables researchers to perform large-scale studies with minimum hands-on processing time per sample. Each plate consists of 16, 24, or 96 microarrays and is offered as a part of the complete automated solution including target preparation, array washing, staining, and scanning instrumentations.

Each microarray on the GeneChip™ HT HG-U133 Plus PM Array Plate contains the same number of probe sets as the industry-standard GeneChip™ Human Genome U133 Plus 2.0 Array (cartridge array format). 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 were introduced with the GeneChip™ HT HG-U133 Plus PM Array Plate:

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 11 to 9 probes and another 6 probe sets were reduced from 11 to 10; 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 GeneChip™ brand HT array plates are synthesized *in situ* using the photolithographic process.

See our website for a list of supporting manuals for procedures regarding target preparation, target hybridization, washing, staining, and array plate scanning.

Reagents, instrumentation, and software required

1. GeneChip™ HT 3' IVT PLUS Reagent Kit
2. GeneChip™ HT Hybridization, Wash, and Stain Kit
3. GeneTitan™ System
4. GeneChip™ Command Console™ software

For a complete list of reagents and consumables required, see our website for a list of supporting documentation for HT array plates.

Critical specifications

Item	Specifications
Feature size	8 µm
Probes/sequence	9 to 11 Perfect Match Probes
Hybridization controls	*bioB*, *bioC*, *bioD*, and *cre*
Poly-A controls	*dap*, *lys*, *phe*, and *thr*
Normalization controls	100 probe sets
Housekeeping/control genes	GAPDH, *β-Actin*
Hybridization volume	90 µL

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. Additional information can be located under the specific array product on our website.

Ordering information

GeneChip™ PM array plate kits include hybridization, scan, and stain trays for use with the GeneTitan™ Instrument. A separate consumables kit is available for use with the Beckman Coulter™ Biomek™ FX^P Target Prep Instrument.

Unless otherwise indicated, all materials are available through **thermofisher.com**. MLS: Fisher Scientific (**fisherscientific.com**) or other major laboratory supplier.

Product	Description	Cat. No.
GeneChip™ HT HG-U133 Plus PM Array Plate[1]	16-array format 24-array format 96-array format	901433 901261 901262
Supporting products		
GeneChip™ HT 3' IVT PLUS Reagent Kit	96 reaction	902417
GeneChip™ 3' IVT PLUS Reagent Kit	10 reaction 30 reaction	902415 902416
GeneTitan™ Hybridization, Wash, and Stain Kit for 3' IVT Arrays	96 reaction	901530
Labware for 3' IVT Express method on the Beckman Coulter™ Biomek™ FX^P	See Footnote[2]	901561

[1] Each array plate kit contains: 1 HT Array Plate, 1 HT Hybridization Tray, 1 HT Scan Tray, 3 HT Stain Trays, and 4 HT Stain Tray covers for the GeneTitan™ Instrument.

[2] The labware kit contains consumables sufficient for 4 × 24 or 4 × 96 rxn runs.

Storage, handling, and stability

The array plates should be stored at 2–8°C and must not be frozen. The array plates must be protected at all times from damage or exposure to dust. Refer to the expiration date on the package label. Do not use array plates or reagents after the expiration date.

When handling the 96-array plate

Remove the array plate from the pouch with gloved hands. The array plate is packaged with a blue plastic base. Do not remove the protective blue plastic base from the array plate or touch the array plate directly. Keep the array plate in the protective base at all times, including when placed on the GeneTitan™ MC Instrument.

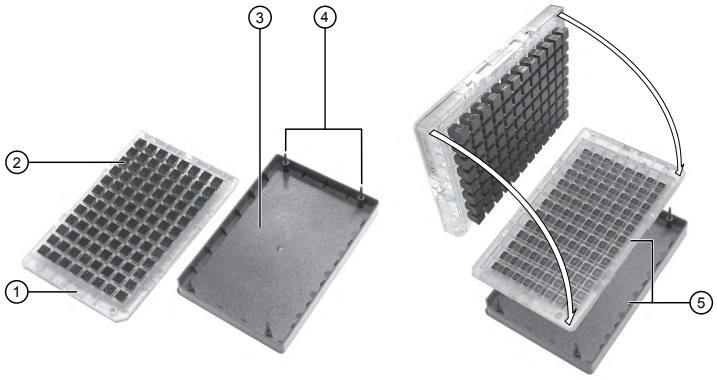

Fig. 1 Array plate assembly.

① Array plate
② Array on glass substrate that is mounted on a peg
③ Blue plastic base
④ Alignment pins
⑤ Array plate and blue base assembly

Note: Displayed action is for demonstration purposes only.

When handling the 96-plate scan tray

Remove the scan tray from the pouch with gloved hands. The scan tray is packaged with a black plastic base. Do not remove the protective black plastic base from the scan tray or touch the scan tray directly. This protective base should stay with the scan tray at all times prior to loading into the GeneTitan™ MC Instrument.

CAUTION! The scan tray has protruding guiding posts that may be sharp and can stick out of the pouch if not handled carefully; therefore, take precaution to prevent unnecessary injury.

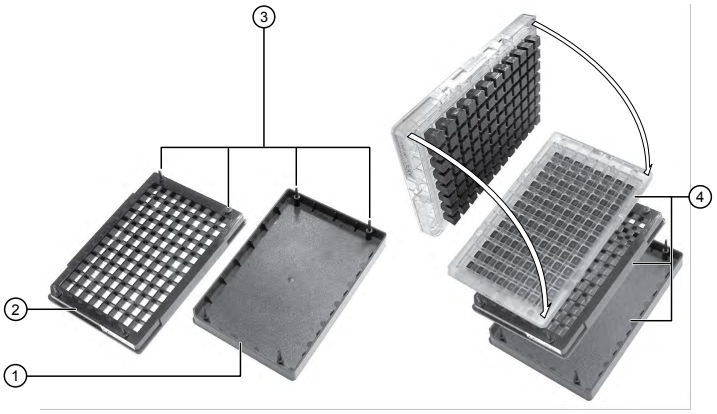

Fig. 2 Scan tray assembly.

① Black plastic base
② Scan tray
③ Alignment pins
④ Array plate, scan tray, and black plastic base assembly

Note: Displayed action is for demonstration purposes only. All movement of the array plate is performed during the fluidics protocol on the GeneTitan™ Instrument.

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at **www.thermofisher.com/us/en/home/global/terms-and-conditions.html**. If you have any questions, please contact Life Technologies at **www.thermofisher.com/support**.

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Revision history: Pub. No. MAN0017678

Revision	Date	Description
A.0	22 April 2018	Initial release in Thermo Fisher Scientific document control system. Supersedes legacy Affymetrix publication number 702719. Updated to the current document template, with associated updates to trademarks, logos, licensing, and warranty.