DataSheet

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Biology for a better world

GeneChip® HT Pico Kit

Automated target preparation kit for genome-wide expression analysis of limited quantities of input RNA from a wide range of sample types on expression arrays from Affymetrix

GeneChip® HT Pico Kit (HT Pico Kit) is the most flexible and sensitive automated target preparation kit for accurate and precise genome-wide expression analysis. From **as few as 10 cells** (approximately 100 pg total RNA),* HT Pico Kit can prepare samples and generate hybridization-ready targets with minimal user intervention for analysis on gene-level expression arrays. Designed for use on the Beckman Coulter® Biomek® FXᵖ Target Prep Expression (TPE) System, HT Pico Kit is capable of processing up to 96 samples from a wide variety of sample types in a single automated run.

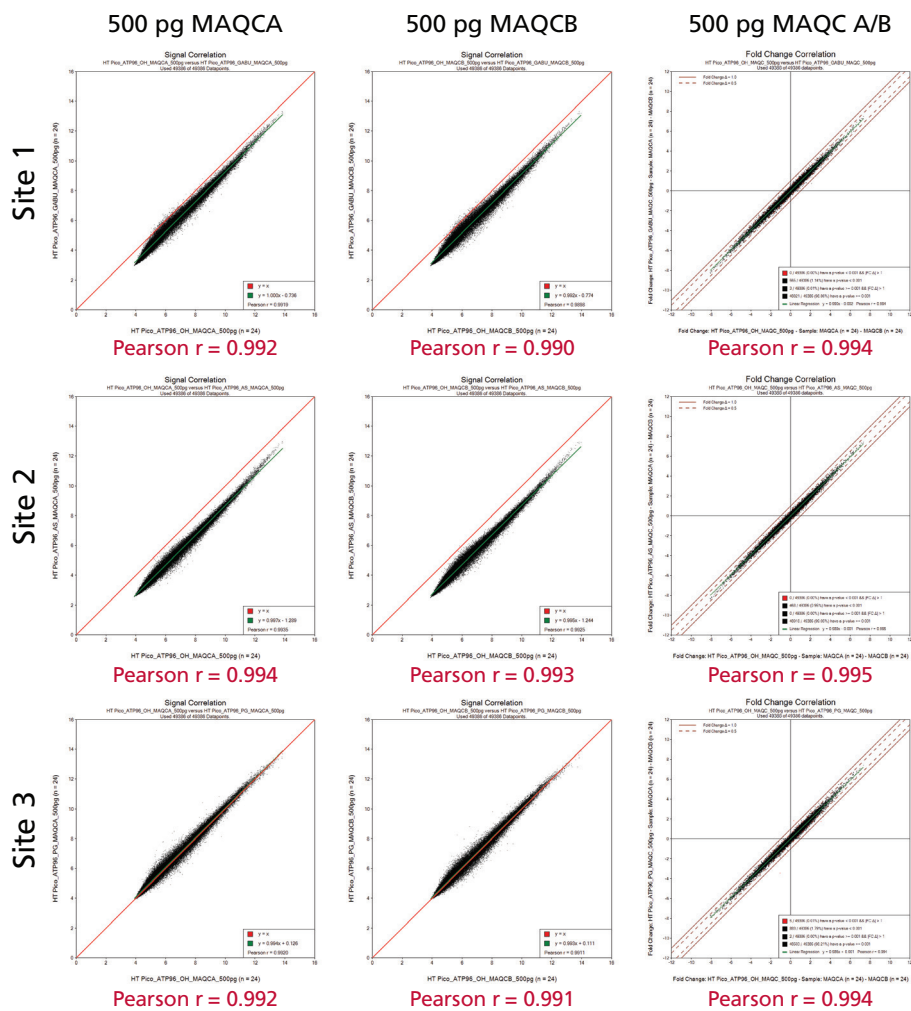## Scalable, flexible, and automated sample preparation for small quantities of RNA

- Preserve precious samples and reveal the biology in small subpopulations of cells using as little as 100 pg of total RNA (approximately 10 cells).*

- Benefit from total flexibility with a single kit for key sample types:

  - Cultured cells

  - Fresh/fresh frozen and formalin-fixed paraffin-embedded (FFPE) tissues

  - Whole blood

- Eliminate the need for globin mRNA or ribosomal RNA reduction, decreasing variability and simplifying experimental workflows.

- Automate protocols on the Biomek FXᵖ TPE System to process 24 or 96 samples robotically, with minimal hands-on time.

- Perform robust gene-level expression profiling analysis with expression arrays from Affymetrix, including GeneChip® 3′ IVT arrays, GeneChip® gene ST arrays, and Clariom™ S arrays.

*The recommended amount of input RNA is 500 pg, and the minimum amount is 100 pg for fresh/fresh frozen tissue or blood. Please review the *GeneChip® High Throughput Pico Kit Automated Target Preparation for GeneChip® Expression Arrays on the Biomek® FXᵖ Target Prep Express System User Guide* (P/N 703398) for more detailed information.

Specifications

Performance specifications	
Sample type	Total RNA from tissue, cell line, whole blood, and FFPE samples
Recommended sample input range	500 pg–10 ng (2–50 ng for FFPE)
Minimum sample input	100 pg (500 pg for FFPE)
Complete sample input range	100 pg–10 ng (500 pg–50 ng for FFPE)
cRNA yield	≥25 µg
cDNA yield	≥11 µg
Technical replicate signal correlation Pearson r	≥0.90
% median coefficient of variation (CV)	≤25%
Actin 3′/5′ ratio	≤5.0
GAPDH 3′/5′ ratio	≤2.0
Poly-A 3′ detection	Present

The following signal correlation and fold change correlation plots with excellent Pearson r values between Affymetrix's internal laboratory and three external research centers demonstrates performance consistency. At each site, replicates of hybridization-ready targets were prepared from 500 pg input MAQCA and MAQCB total RNA using HT Pico Kit and were hybridized to Affymetrix® Human Genome U219 Array Plate.

	500 pg MAQCA	500 pg MAQCB	500 pg MAQC A/B
Site 1	Pearson r = 0.992	Pearson r = 0.990	Pearson r = 0.994
Site 2	Pearson r = 0.994	Pearson r = 0.993	Pearson r = 0.995
Site 3	Pearson r = 0.992	Pearson r = 0.991	Pearson r = 0.994

The following CV table demonstrates HT Pico Kit's consistent assay performance when run at external sites. Hybridization targets were prepared in triplicate from 500 pg MAQCA and MAQCB total RNA by four sites (Affymetrix, Site 1, Site 2, and Site 3). Technical replicates were hybridized on Affymetrix® Human Genome U219 Array Plate. Median CV was calculated using all probe sets. Specification median CV is <25%.

Site	RNA sample	Gene-level median CV
Affymetrix	MAQCA	12.93%
Affymetrix	MAQCB	12.92%
Site 1	MAQCA	13.94%
Site 1	MAQCB	14.76%
Site 2	MAQCA	13.80%
Site 2	MAQCB	14.77%
Site 3	MAQCA	11.76%
Site 3	MAQCB	12.07%

Ordering information

Part number	Description	Pack size (reactions)
902790	GeneChip® Pico Kit	24
902791	GeneChip® HT Pico Kit	96

Related products

Part number	Description	Pack size (reactions)
900720	GeneChip® Hybridization, Wash, and Stain Kit	30
901530	GeneTitan® Hybridization, Wash, and Stain Kit for 3' IVT Arrays	96
901622	GeneTitan® Hybridization, Wash, and Stain Kit for WT Array Plates	96

Recommended arrays

Part number	Description	Pack size
902957	Clariom™ S Array Plate, human	96 arrays
902958	Clariom™ S Array Plate, mouse	96 arrays
902959	Clariom™ S Array Plate, rat	96 arrays
901262	GeneChip® Human HT HG-U133+ PM Array Plate	96 arrays
901595	Affymetrix® Human U219 Array Plate	96 arrays
901258	GeneChip® Mouse HT MG-430 PM Array Plate	96 arrays
901260	GeneChip® HT RG-230 PM Array Plate	96 arrays
902138	Human Gene 2.1 ST Array Plate	96 arrays
902141	Mouse Gene 2.1 ST Array Plate	96 arrays
902144	Rat Gene 2.1 ST Array Plate	96 arrays
902147	CHO Gene 2.1 ST Array Plate	96 arrays

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