

## Affymetrix® Gene 1.1 ST Array Strips for whole-transcriptome analysis of model and applied research organisms with the GeneAtlas® System

Get the most complete and accurate picture of gene expression with whole-transcript resolution

Model and applied research organisms are valuable for comparative genomics research, evolutionary biology, and continue to play a critical role in deciphering the molecular mechanisms underlying human disease, and agricultural crop improvements. Affymetrix® Gene 1.1 ST Array Strips have been developed for the analysis of a wide range of model and applied research organisms. These organisms are the latest additions to the growing family of Affymetrix® Gene Expression Microarrays offering whole-transcript coverage. These unique designs are based on most recent genome content and offer the highest probe coverage (up to 26 probes across the full length of the gene). This yields accurate detection for genome-wide transcript expression changes and provides higher resolution and accuracy than other classical 3'-biased microarray solutions on the market. The whole-transcriptome analysis approach enables researchers to detect multiple transcript isoforms from a given gene, including those that could be missed using a 3'-biased expression design, such as splice variants, non-polyadenylated transcripts, transcripts with alternative polyadenylation sites, and truncated transcripts.

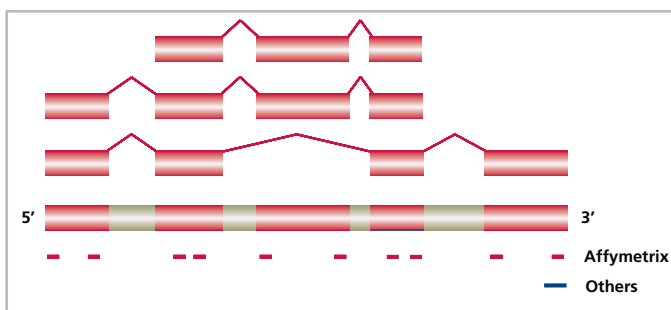
Affymetrix Gene 1.1 ST Array Strips are designed exclusively for the GeneAtlas® System—the first personal microarray system to allow four samples to be processed in parallel. It combines affordability, simplified workflow, ease of use, intuitive software, and excellent performance. *For more information on the GeneAtlas System, please visit [www.affymetrix.com/geneatlas](http://www.affymetrix.com/geneatlas).*

### Benefits of Affymetrix Gene 1.1 ST Array Strips:

- **Highest transcript coverage** – Get confident expression measurements of well-annotated content with up to 26 probes per transcript
- **Whole transcriptome analysis** – Capture the transcript isoforms you may miss with 3'-biased expression designs
- **High data reproducibility** – Achieve high inter- and intra-array strip signal correlation ( $R > 0.99$ )
- **Convenient format** – Process four samples at the same time with minimal manual array handling
- **Simple workflow** – Streamline your work, from target preparation through pathway analysis, and use intuitive software for data interpretation

### Design strategy and coverage

Affymetrix Gene 1.1 ST Expression Array designs provide the highest coverage of the transcribed genome. We use a comprehensive collection of information sources to design probes that interrogate up to 26 unique sequences of each transcript. This design strategy provides you with the ability to evaluate whole-transcriptome gene expression at the gene and exon levels, which allows the study of transcript variants and alternative splicing events.



The high number of unique 25-mer probes interrogate up to 650 bases per transcript. This high coverage across the entire transcript results in superior performance and data confidence as well as the ability to update your experimental data as the understanding of each genome and transcriptome grows.

For the Gene 1.1 ST Array Strips, probes are selected across the entire gene, enabling evaluations at both the gene (transcript) and exon levels, which allows the study of transcript variants and alternative splicing events.

Platform specification	Value
Sensitivity <sup>1</sup>	≥1:100,000 (≥1.5 pM)
Signal correlation coefficient	>0.99
Dynamic range <sup>1</sup>	~3 logs
Total RNA input required	50–500 ng
Probe feature size	5 μm
Background probes	Antigenomic set
Poly-A controls	<i>dap, lys, phe, thr</i>
Hybridization controls	<i>bioB, bioc, bioD, creX</i>

<sup>1</sup> Sensitivity and dynamic range were determined using a Latin square experimental design with 61 in vitro transcribed (IVT), full-length transcripts added to HeLa total RNA. For this experiment, 12 spike pools with different relative abundances were tested. Spike concentration differences were defined as significant if the t-statistic results were greater than a threshold set based on three replicates and 95% confidence.

**Ordering information** - Each part number corresponds to one four-array strip and the necessary hybridization, wash, and scan trays.

Part #	Description	Genome build	Probes	Median probes/ gene-level probe sets	Gene-level probe sets
901793	Affymetrix® Arabidopsis Gene 1.1 ST Array Strip	TAIR10	600,941	22	28,501
901794	Affymetrix® Bovine Gene 1.1 ST Array Strip	UMD3.1	526,810	23	24,341
901795	Affymetrix® Canine Gene 1.1 ST Array Strip	canFam2	590,178	24	27,684
901855	Affymetrix® Chicken Gene 1.1 ST Array Strip	galGal3	439,582	24	18,214
901832	Affymetrix® Cynomolgus-Rhesus Gene 1.1 ST Array Strip	RefSeq (Cynomolgus) rheMac2 (Rhesus)	116,050 716,147	25 23	5,319* 37,293
901796	Affymetrix® Equine Gene 1.1 ST Array Strip	equCab2	504,603	21	25,924
901830	Affymetrix® Feline Gene 1.1 ST Array Strip	felCat3	792,191	24	34,952
901831	Affymetrix® Marmoset Gene 1.1 ST Array Strip	WUGSC 3.2/calJac3	656,668	21	33,971
901797	Affymetrix® Medicago Gene 1.1 ST Array Strip	Mt2.0	654,305	22	38,144
901829	Affymetrix® Ovine Gene 1.1 ST Array Strip	oarV2.0	508,538	23	22,059
901798	Affymetrix® Porcine Gene 1.1 ST Array Strip	Sscrofa9 (susScr2)	572,667	25	25,388
901799	Affymetrix® Rhesus Gene 1.1 ST Array Strip	rheMac2	716,147	23	37,293
901800	Affymetrix® Rice (US) Gene 1.1 ST Array Strip (ssp. Japonica)	osa1r6	816,815	19	45,207
901856	Affymetrix® Rice (Jp) Gene 1.1 ST Array Strip (ssp. Japonica)	RAP2	521,299	17	29,664
901857	Affymetrix® Rice (Cn) Gene 1.1 ST Array Strip (ssp. Indica)	BGI	610,417	15	40,987
901801	Affymetrix® Soybean Gene 1.1 ST Array Strip (includes Bradyrhizobium japonicum)	Glyma1	1,210,950 132,710	19 16	66,473 8,250
901854	Affymetrix® Zebra Finch Gene 1.1 ST Array Strip	taeGut1	381,165	22	18,595
901802	Affymetrix® Zebrafish Gene 1.1 ST Array Strip	danRer7 & Zv9	1,205,186	22	59,302

\*Transcript sequences

#### Also available

901626	Affymetrix® Human Gene 1.1 ST Array Strip	NCBI 36/UCSC hg18	764,885	26	28,875
901628	Affymetrix® Mouse Gene 1.1 ST Array Strip	NCBI 36/UCSC mm8	770,317	26	28,853
901627	Affymetrix® Rat Gene 1.1 ST Array Strip	Baylor HGSC v3.4/UCSC rn4	722,254	26	27,342

#### Related products

Part #	Quantity	Description	Details
4411973 4411974	10 RXN 30 RXN	Ambion® WT Expression Kit	Assay Kit required to prepare target RNA for array hybridization. This kit must be ordered from Ambion® directly
901525 901524	10 RXN 30 RXN	GeneChip® WT Terminal Labeling and Controls Kit	Contains GeneChip® WT Terminal Labeling Kit, Poly-A Control Kit, and Hybridization Control Kit
901667	60 RXN	GeneAtlas™ Hybridization, Wash, and Stain Kit for WT Array Strips	Reagents Required for processing whole transcript (WT) array strips on the GeneAtlas® System

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