

Affymetrix® Gene 1.1 ST Array Plates for whole-transcriptome analysis of model and applied research organisms with the GeneTitan® family of instruments

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

Affymetrix understands the importance of selecting a model organism best suited to answer the biological question being studied. In order to meet your research goals, Affymetrix offers a broad catalog of Gene 1.1 ST Array Plates, for studying whole-genome expression profiles of many organisms commonly used in research today. This growing catalog of arrays includes organisms commonly used as models for deciphering the molecular mechanisms underlying human disease and agriculture crop improvements. These organisms are the latest additions to the growing family of Affymetrix® Gene Expression Microarrays offering whole-transcript coverage.

These model and applied research array plates are the latest addition to the growing family of Affymetrix gene expression microarrays offering whole-transcript coverage. Every design is based on the most recent genome information available and offers the highest probe coverage (a median of up to 25 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.

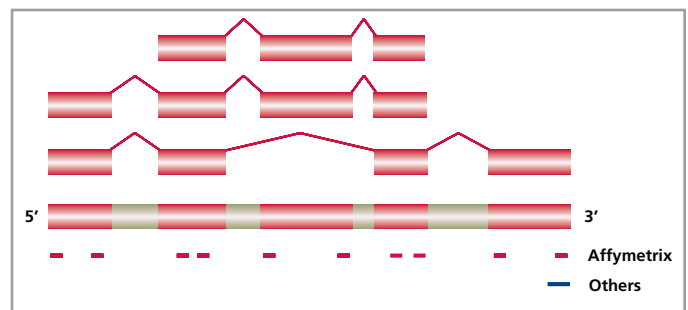
Affymetrix Gene 1.1 ST Array Plates are designed exclusively for the GeneTitan® family of instruments—the first hands-free microarray system to allow up to 96 samples to be processed in parallel. With an integrated hybridization oven, fluidics station, and imaging device, you'll spend less time acquiring data and have more time for science. *For more information on the GeneTitan family of instruments, please visit www.affymetrix.com/genetitan.*

Benefits of Affymetrix Gene 1.1 ST Array Plates:

- **Highest transcript coverage** – Get confident expression measurements of well-annotated content with a median of up to 25 probes per gene
- **Whole-transcriptome analysis** – Capture the transcript isoforms you may miss with 3'-biased expression designs
- **High data reproducibility** – Signal correlation ($R > 0.99$)
- **Convenient formats** – Process 16, 24, or 96 samples at the same time with minimal manual array handling

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 a median of up to 25 unique sequences of each gene. 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 a median of up to 625 bases per gene. 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 Gene 1.1 ST Array Plates, 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 ¹	≥1:100,000 (≥1.5 pM)
Signal correlation coefficient	>0.99
Dynamic range ¹	~3 logs
Total RNA input required	50–500 ng
Probe feature size	5 μm
Background probes	Antigenomic set
Poly-A controls	<i>dap</i> , <i>lys</i> , <i>phe</i> , <i>thr</i>
Hybridization controls	<i>bioB</i> , <i>bioc</i> , <i>bioD</i> , <i>creX</i>

¹Sensitivity 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 16, 24, or 96-Array Plate.

Part number			Description	Genome build	Probes	Median probes/gene	Gene-level probe sets
16-Array Plate ^{1,2,3}	24-Array Plate	96-Array Plate ^{2,3}					
550322	901913	550324	Arabidopsis Gene 1.1 ST Array Plate	TAIR10	600,941	22	28,501
550428	902159	550430	<i>C. elegans</i> Gene 1.1 ST Array Plate	WS231	638,442	24	28,305
550337	901918	550339	Bovine Gene 1.1 ST Array Plate	UMD3.0	526,810	23	24,341
550362	901923	550364	Canine Gene 1.1 ST Array Plate	canFam2	590,097	24	27,681
550352	901928	550354	Chicken Gene 1.1 ST Array Plate	galGal3	439,582	24	18,214
550381	901939	550383	Cyno-Rhes Gene 1.1 ST Array Plate	RefSeq (Cynomolgus) rheMac2 (Rhesus)	116,050 716,101	24 23	5,319 37,292
550390	901934	550392	Cynomolgus Gene 1.1 ST Array Plate	RefSeq	684,229	20	40,096
550418	902154	550420	<i>Drosophila</i> Gene 1.1 ST Array Plate ⁴	r5.45	362,078	25	15,309
550340	901944	550342	Equine Gene 1.1 ST Array Plate	equCab2	504,603	21	25,923
550365	901949	550367	Feline Gene 1.1 ST Array Plate	felCat3	792,191	24	34,942
550447	902242	550449	Guinea Pig Gene 1.1 ST Array Plate	cavPor3	518,682	22	24,974
550334	901959	550336	Marmoset Gene 1.1 ST Array Plate	WUGSC 3.2/calJac3	656,668	21	33,971
550328	901964	550330	Medicago Gene 1.1 ST Array Plate	Mt2.0	654,305	22	38,144
550343	901969	550345	Ovine Gene 1.1 ST Array Plate	oarV2.0	508,538	23	22,047
550349	901974	550351	Porcine Gene 1.1 ST Array Plate	Sscrofa9 (susScr2)	394,580	22	19,212
550444	902237	550446	Rabbit Gene 1.1 ST Array Plate	oryCun2	496,321	22	23,282
550331	901984	550333	Rhesus Gene 1.1 ST Array Plate	rheMac2	716,101	23	37,292
550377	901979	550379	Rice (Cn) Gene 1.1 ST Array Plate (ssp. Indica)	BGI	610,417	15	40,987
550374	901994	550376	Rice (Jp) Gene 1.1 ST Array Plate (ssp. Japonica)	RAP2	521,299	17	29,664
550371	901989	550373	Rice (US) Gene 1.1 ST Array Plate (ssp. Japonica)	osa1r6	816,815	19	45,207
550478	902298	550480	Tomato Gene 1.1 ST Array Plate	SL 2.40	715,135	20	37,815
550314	901999	550316	Soy Bean Gene 1.1 ST Array Plate (includes <i>Bradyrhizobium japonicum</i>)	Glyma1 GeneBank®	1,210,950 123,710	19 16	66,473 8,250
550355	901954	550357	Zebra Finch Gene 1.1 ST Array Plate	TaeGut1	381,165	22	18,595
550325	902004	550327	Zebrafish Gene 1.1 ST Array Plate	danRer6 & Zv9	1,255,682	22	59,302

¹ Minimum order quantity of 3 plates.

² Products are manufactured when purchase order is placed.

³ Part number does not include trays required to process the arrays. Please include a GeneTitan® Consumables Kit (P/N 901836) for each array plate ordered.

⁴ Supports analysis of *D. melanogaster*, *D. yakuba*, and *D. simulans* via user configurable setting in Expression Console™ (EC) Software.

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