

Clariom™ D solutions for human, mouse, and rat

Deep and broad transcriptome-level expression profiling solutions for the fastest path to actionable results

Accelerate your biomarker discovery with Clariom D solutions—the next generation of transcriptome-level profiling tools—providing a highly detailed view of the transcriptome for the fastest path to actionable results. Available for human, mouse, and rat, Clariom D solutions allow translational scientists to generate high-fidelity biomarker signatures quickly and easily with a design that provides the most intricate transcriptome-wide gene- and exon-level expression profiles including the ability to detect alternative splicing events of coding and long non-coding RNA, in a single three-day experiment.

Get all the data you need. Now.

- Rapidly identify complex disease signatures from as many as 540,000 transcripts, the most comprehensive coverage available, ensuring biomarkers are not missed.
- Confidently detect genes, exons, and alternative splicing events that give rise to coding and long non-coding RNA isoforms.
- Detect rare and low-expressing transcripts otherwise missed by common sequencing practices.
- Go from data to insight in minutes with intuitive, highly visual, free analysis software.

When you have precious samples, get it right the first time.

- Generate robust expression profiles from as little as 100 pg of total RNA—as few as 10 cells.
- Use RNA from various sample types including whole blood, cultured cells, and fresh/fresh frozen or FFPE tissues.
- Preserve sample integrity and reduce data variability with an assay that does not require a globin or rRNA removal step.

Clariom D solutions are available in a single-sample (cartridge array) format for use on the GeneChip® 3000 instrument system and come with reagents and fast, simple Transcriptome Analysis Console (TAC) Software to analyze and visualize global expression patterns of genes, exons, pathways, and alternative splicing events.

Get the coverage you require, the reproducibility you need, and the insights you want to act on your discoveries. Now.

Content summary	Human	Mouse	Rat
Genes ¹	>134,700	>66,100	>68,900
Transcripts ¹	>542,500	>214,900	>495,200
Exons ¹	>948,300	>498,500	>320,400
Exon-exon splice junctions ¹	>484,900	>282,500	>293,700
Total probes ¹	>6,765,500	>6,022,300	>5,946,400
Probes targeting exons ¹	>4,781,200	>4,895,600	>4,780,700
Probes targeting exon-exon splice junctions ¹	>1,984,300	>1,126,700	>1,165,700
Probe length (bases)	25	25	25
Probe feature size	5 µm	5 µm	5 µm
Background probes	Antigenomic set	Antigenomic set	Antigenomic set

1. Numbers are representative annotation as of April, 2016. All numbers have been rounded down to the nearest hundred.

Performance specifications	Human, mouse, rat
Total RNA input required ¹	100 pg–500 ng
Sensitivity	≥1.5 pM
Detectable 2-fold change	1:100,000 vs. 1:50,000
Dynamic range	~3 logs
Technical replicate signal correlation	≥0.90
Correlation coefficient (intra-lot)	≥0.99
cRNA yield	≥20 µg
cDNA yield	≥6 µg
Controls ²	92 ERCC transcripts Poly-A (<i>dap, lys, phe, thr</i>)
Target orientation ³	Sense target

1. Total RNA input requirements depend on assay selection. The assays types offered require different total RNA input amounts based on sample source.
2. Probe sets interrogating external RNA controls present in the Ambion® ERCC RNA Spike-In Control Mixes, P/N 4456740 and 4456739 (purchased from Thermo Fisher Scientific).
3. The probes tiled on the array are designed in the anti-sense orientation, requiring sense-strand labeled targets to be hybridized to the array.

Data sources	Genes ¹		
	Human	Mouse	Rat
Ensembl	>57,500	>37,600	>25,300
VEGA	>48,500	>23,200	–
NONCODE	>55,900	>42,000	>500
lncRNAWiki	>50,000	–	–
UCSC Genes	>43,800	>26,300	–
AceView	>41,100	–	>30,900
miTranscriptome	>34,500	–	–
RefSeq	>25,600	>23,500	>16,900
MGC	>17,200	>17,400	>6,400
MGI	–	>25,800	–
RGD	–	–	>30,300
Consensus CDS	>18,500	–	–
RNA Central	>17,200	–	–
circBase	>12,200	–	–
Human Body Map	>10,200	–	–
lincRNAdb	>80	>60	>10
Publication-specific gene sets ^{2,3,4,5}	>3,000	>10,000	>10,290
Non-overlapping orthologous mouse gene and transcript models ¹	–	–	>21,500

Transcripts ¹		
Human	Mouse	Rat
>196,000	>94,200	>28,500
>176,700	>73,800	–
>100,500	>67,300	>500
>99,900	–	–
>179,200	>54,400	–
>51,200	–	>59,400
>74,600	–	–
>50,800	>32,500	>18,100
>26,000	>23,500	>6,600
–	>33,000	–
–	–	>62,000
>30,400	–	–
>27,900	–	–
>90,800	–	–
>21,200	–	–
>90	>80	>10
>6,000	>14,000	>17,320
–	–	>28,100

1. Numbers are representative annotation as of April, 2016. All numbers have been rounded down to the nearest hundred.

2. Luo, H., et al. Comprehensive characterization of 10,571 mouse large intergenic noncoding RNAs from whole transcriptome sequencing. *PLoS ONE* **8**(8):e70835 (2013).

3. Chalmel, F., et al. High-resolution profiling of novel transcribed regions during rat spermatogenesis. *Biology of Reproduction* **91**(1):5 (2014).

4. Williams, W. P., et al. Increased levels of B1 and B2 SINE transcripts in mouse fibroblast cells due to minute virus of mice infection. *Virology* **327**(2):233–241 (2004).

5. Guo, J. U., et al. Expanded identification and characterization of mammalian circular RNAs. *Genome Biology* **15**(7):409 (2014).

Ordering information

Assays for 100 pg–50 ng of total RNA isolated from whole blood, cultured cells, and fresh/fresh frozen or FFPE tissues.

Part number	Product description	Pack size (reactions)
902924	Clariom™ D Pico Assay, human	12
902925		30
902663	Clariom™ D Pico Assay, mouse (previously named GeneChip® Mouse Transcriptome Pico Assay 1.0)	12
902664		30
902665	Clariom™ D Pico Assay, rat (previously named GeneChip® Rat Transcriptome Pico Assay 1.0)	12
902666		30
900720	GeneChip® Hybridization, Wash, and Stain Kit	30

Assays for 50–500 ng of total RNA isolated from whole blood, cultured cells, and fresh/fresh frozen tissues.

Part number	Product description	Pack size (reactions)
902922	Clariom™ D Assay, human	10
902923		30
902513	Clariom™ D Assay, mouse (previously named GeneChip® Mouse Transcriptome Assay 1.0)	10
902514		30
902633	Clariom™ D Assay, rat (previously named GeneChip® Rat Transcriptome Assay 1.0)	10
902634		30
900720	GeneChip® Hybridization, Wash, and Stain Kit	30

Affymetrix, Inc: (US) +1-888-362-2447, +1-408-731-5000 ■ (EU) +44-(0)1628-552550 ■ (JP) +81-(0)3-6430-4020 ■ (CN) +86-21-63915511

eBioscience Products: (US) +1-888-999-1371, +1-858-642-2058 ■ (EU) +43 1 796 40 40 305 ■ (JP) +81-(0)3-6430-4020

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P/N EMI07313 Rev. 1

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