

Clariom™ S solutions for human, mouse, and rat

Gene-level whole-transcriptome expression profiling solutions for the fastest path to actionable results

Obtain a gene-level view of the transcriptome with Clariom S solutions, providing the fastest, simplest, and most scalable path to measure gene-level expression across the transcriptome. With extensive coverage of all well-annotated genes, compatibility with clinical sample types, scalable formats, and flexible data analysis software, Clariom S solutions are the smartest tools to find expression biomarkers with known function quickly, easily, and cost effectively.

Simple, swift biomarker discovery.

- Accurately measure gene-level expression from >20,000 well-annotated genes to get to answers quickly.
- Choose a format that suits your throughput needs, processing from 1 to 192 samples a day.
- Go from data to insight in minutes with intuitive, highly visual, free analysis software designed for the biologist.

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.
- Utilize RNA from various sample types including blood, 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.
- Save time and money with fully automated sample preparation options.

Clariom S solutions are available in formats for single-sample (cartridge array) processing on the GeneChip® 3000 instrument system and high-throughput, automated (array plate) processing on GeneTitan® Instrument, offering the flexibility to accommodate both small and large cohort studies. The solutions include reagents and fast, simple Transcriptome Analysis Console (TAC) Software to analyze and visualize global expression patterns and pathways.

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

| Content summary | Human ¹ | Mouse ¹ | Rat ¹ | Performance specifications | Human, mouse, rat |
|-------------------------------------|--------------------|--------------------|------------------|----------------------------------------|-------------------------------------------------------------|
| Genes ¹ | >20,800 | >22,100 | >22,900 | Total RNA input required ³ | 100 pg–500 ng |
| Transcripts ¹ | >337,100 | >150,300 | >129,800 | Sensitivity | ≥1.5 pM |
| Total probes ¹ | >211,300 | >221,900 | >231,800 | Detectable 2-fold change | 1:100,000 vs. 1:50,000 |
| Probes targeting genes ¹ | >205,800 | >221,300 | >229,500 | Dynamic range | ~3 logs |
| Probe length (bases) | 25 | 25 | 25 | Technical replicate signal correlation | ≥0.90 |
| Probe feature size ¹ | 5 μm | 5 μm | 5 μm | Correlation coefficient (intra-lot) | ≥0.99 |
| Background probes | Antigenomic set | Antigenomic set | Antigenomic set | cRNA yield | ≥20 μg |
| Probe orientation ² | Anti-sense | Anti-sense | Anti-sense | cDNA yield | ≥6 μg |
| | | | | Controls ^{4,5} | 92 ERCC transcripts Poly-A (<i>dap, lys, phe, thr</i>) |
| | | | | Fluidics script | FS450_0007 |

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

2. The probes tiled on the array are designed in the anti-sense orientation, requiring sense-strand labeled targets to be hybridized to the array.

3. Total RNA input requirements are dependent on the amount of available total RNA and sample source. Different assays are required for different input amounts and sample source.

4. 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).

5. The arrays contain probe sets for both ERCC and Poly-A spike-in controls. Sequence homology between the two control mixes will result in cross-hybridization of target to the control probes on the array. It is important to use only one control probe set when processing the arrays (ERCC or Poly-A controls), but not both.

| Data sources | Human | Mouse | Rat |
|---------------------------------------------------------------------------|---------|---------|---------|
| Ensembl | >20,000 | >21,700 | >20,500 |
| VEGA | >19,900 | >14,700 | – |
| NONCODE | >12,200 | >9,200 | – |
| lncRNAWiki | >12,000 | – | – |
| UCSC Genes | >19,800 | >21,000 | – |
| AceView | >10,800 | – | >18,000 |
| miTranscriptome | >10 | – | – |
| RefSeq | >19,500 | >20,800 | >16,500 |
| MGC | >17,100 | >17,300 | >6,400 |
| MGI | – | >21,300 | – |
| RGD | – | – | >21,700 |
| Consensus CDS | >18,500 | – | – |
| RNA Central | >1,100 | – | – |
| circBase | >11,500 | – | – |
| Human Body Map | >400 | – | – |
| lincRNAdb | >10 | >10 | >2 |
| Publication-specific gene sets ^{2,3,4,5} | >3,000 | – | >8,020 |
| Non-overlapping orthologous mouse gene and transcript models ¹ | – | – | >20 |

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) |
|-------------|----------------------------------------------|-----------------------|
| 902928 | Clariom™ S Pico Assay, human | 12 |
| 902929 | Clariom™ S Pico Assay, human | 30 |
| 902932 | Clariom™ S Pico Assay, mouse | 12 |
| 902933 | Clariom™ S Pico Assay, mouse | 30 |
| 902936 | Clariom™ S Pico Assay, rat | 12 |
| 902937 | Clariom™ S Pico Assay, rat | 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) |
|-------------|----------------------------------------------|-----------------------|
| 902926 | Clariom™ S Assay, human | 10 |
| 902927 | Clariom™ S Assay, human | 30 |
| 902930 | Clariom™ S Assay, mouse | 10 |
| 902931 | Clariom™ S Assay, mouse | 30 |
| 902934 | Clariom™ S Assay, rat | 10 |
| 902935 | Clariom™ S Assay, rat | 30 |
| 900720 | GeneChip® Hybridization, Wash, and Stain Kit | 30 |

Ordering information (continued)

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

| Part number | Product description | Pack size (reactions) |
|-------------|----------------------------------------------|-----------------------|
| 902963 | Clariom™ S Pico Assay HT, human | 24 ¹ |
| 902964 | Clariom™ S Pico Assay HT, human | 96 |
| 902965 | Clariom™ S Pico Assay HT, mouse | 24 ¹ |
| 902966 | Clariom™ S Pico Assay HT, mouse | 96 |
| 902967 | Clariom™ S Pico Assay HT, rat | 24 ¹ |
| 902968 | Clariom™ S Pico Assay HT, rat | 96 |
| 901622 | GeneChip® Hybridization, Wash, and Stain Kit | 96 |

1. The library preparation portion of this assay contains enough material to process 24 samples on the Beckman FX Biomek® FX® Target Prep Express, or 30 samples using the manual protocol.

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

| Part number | Product description | Pack size (reactions) |
|-------------|----------------------------------------------|-----------------------|
| 902969 | Clariom™ S Assay HT, human | 24 ¹ |
| 902970 | Clariom™ S Assay HT, human | 96 |
| 902971 | Clariom™ S Assay HT, mouse | 24 ¹ |
| 902972 | Clariom™ S Assay HT, mouse | 96 |
| 902973 | Clariom™ S Assay HT, rat | 24 ¹ |
| 902974 | Clariom™ S Assay HT, rat | 96 |
| 901622 | GeneChip® Hybridization, Wash, and Stain Kit | 96 |

1. The library preparation portion of this assay contains enough material to process 24 samples on the Beckman FX Biomek® FX® Target Prep Express, or 30 samples using the manual protocol.

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