

Clariom S solutions for human, mouse, and rat

Gene-level whole-transcriptome expression profiling solutions for a faster path to biomarker discovery

Applied Biosystems™ Clariom™ S solutions provide a fast, simple, and 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 for finding expression biomarkers with known functions 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

Robust results even from precious samples

- 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 formalin-fixed, paraffin-embedded (FFPE) tissues
- Preserve sample integrity and reduce data variability with an assay that does not require a globin or rRNA removal step
- Help 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 Applied Biosystems™ GeneChip™ 3000 instrument system, and high-throughput, automated (array plate) processing on the Applied Biosystems™ GeneTitan™ Multi-Channel (MC) Instrument, offering the flexibility to accommodate studies of both small and large cohorts. The solutions include reagents and fast, simple Applied Biosystems™ Transcriptome Analysis Console (TAC) Software to analyze and visualize global expression patterns and pathways.

Array specifications

Content summary	Human	Mouse	Rat
Genes*	>20,800	>22,100	>22,900
Transcripts*	>337,100	>150,300	>129,800
Total probes*	>211,300	>221,900	>231,800
Probes targeting genes*	>205,800	>221,300	>229,500
Probe length (bases)	25	25	25
Probe feature size	5 µm	5 µm	5 µm
Background probes	Antigenomic set	Antigenomic set	Antigenomic set
Probe orientation**	Antisense	Antisense	Antisense

Performance specifications	Human, mouse, rat
Total RNA input required†	100 pg–500 ng
Sensitivity	≥1.5 pM
Detectable 2-fold change	1:100,000 vs. 1:50,000
Dynamic range	~3 logarithmic units
Technical replicate signal correlation	≥0.90
Correlation coefficient (intra-lot)	≥0.99
cRNA yield	≥20 µg
cDNA yield	≥6 µg
Controls‡	<ul style="list-style-type: none"> • 92 ERCC transcripts • poly(A) (<i>dap, lys, phe, thr</i>)
Fluidics script	FS450_0007

* Numbers are representative of annotations as of April 2016. All numbers have been rounded down to the nearest hundred.

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

† 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 sources.

‡ Probe sets interrogating external RNA controls present in the Applied Biosystems™ ERCC RNA Spike-In Control Mixes (Cat. No. 4456740 and 4456739). 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), 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
Nonoverlapping orthologous mouse gene and transcript models	–	–	>20
Publication-specific gene sets**	>3,000	–	>8,020

* Numbers are representative of annotations as of April 2016. All numbers have been rounded down to the nearest hundred.

- ** 1. Luo H, et al. (2013) Comprehensive characterization of 10,571 mouse large intergenic noncoding RNAs from whole transcriptome sequencing. *PLoS One* 8(8):e70835.
 2. Chalmel F, et al. (2014) High-resolution profiling of novel transcribed regions during rat spermatogenesis. *Biol Reprod* 91(1):5.
 3. Williams WP, et al. (2004) Increased levels of B1 and B2 SINE transcripts in mouse fibroblast cells due to minute virus of mice infection. *Virology* 327(2):233–241.
 4. Guo JU, et al. (2014) Expanded identification and characterization of mammalian circular RNAs. *Genome Biol* 15(7):409.

Ordering information

Product	Quantity	Cat. No.
Assays for 100 pg–50 ng of total RNA isolated from whole blood, cultured cells, and fresh/fresh-frozen or FFPE tissues		
Clariom S Pico Assay, human	12 reactions	902928
	30 reactions	902929
Clariom S Pico Assay, mouse	12 reactions	902932
	30 reactions	902933
Clariom S Pico Assay, rat	12 reactions	902936
	30 reactions	902937
GeneChip Hybridization, Wash, and Stain Kit	30 reactions	900720
Assays for 50–500 ng of total RNA isolated from whole blood, cultured cells, and fresh/fresh-frozen tissues		
Clariom S Assay, human	10 reactions	902926
	30 reactions	902927
Clariom S Assay, mouse	10 reactions	902930
	30 reactions	902931
Clariom S Assay, rat	10 reactions	902934
	30 reactions	902935
GeneChip Hybridization, Wash, and Stain Kit	30 reactions	900720
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 MC Instrument		
Clariom S Pico Assay HT, human	24 reactions*	902963
	96 reactions	902964
Clariom S Pico Assay HT, human	24 reactions*	902963
	96 reactions	902964
Clariom S Pico Assay HT, mouse	24 reactions*	902965
	96 reactions	902966
Clariom S Pico Assay HT, rat	24 reactions*	902967
	96 reactions	902968
GeneChip Hybridization, Wash, and Stain Kit	96 reactions	901622
Assays for 50–500 ng of total RNA isolated from whole blood, cultured cells, and fresh/fresh-frozen tissues, for analysis on GeneTitan MC Instrument		
Clariom S Assay HT, human	24 reactions*	902969
	96 reactions	902970
Clariom S Assay HT, mouse	24 reactions*	902971
	96 reactions	902972
Clariom S Assay HT, rat	24 reactions*	902973
	96 reactions	902974
GeneChip Hybridization, Wash, and Stain Kit	96 reactions	901622

* The library preparation portion of this assay contains enough material to process 24 samples on the Beckman Coulter Biomek™ FX[®] Target Prep Express automated workstation, or 30 samples using the manual protocol.

Find out more at thermofisher.com/microarrays

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