

geneLEAD



Flexible and fully-automated sample to result system

Ease of use

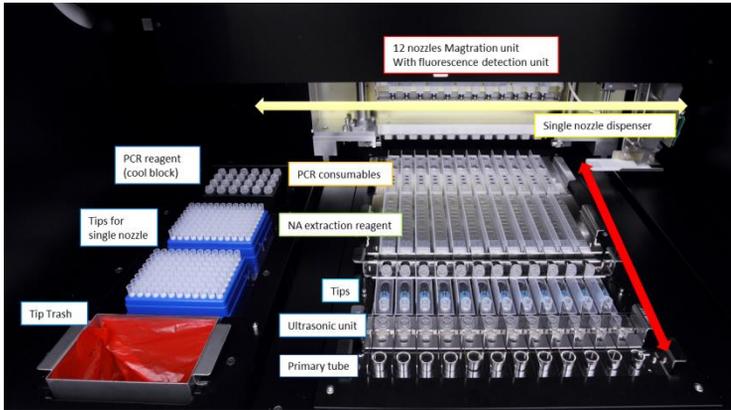
- **Fully automated nucleic acid extraction, PCR setup and real-time PCR**
- **Prefilled-nucleic acid extraction reagent and Prefilled-PCR reagent**
- **Universal design of nucleic acid extraction reagent**

Flexibility for reaction setup

- **For up to 12 samples/run (1.5-2.0 hr/run)**
- **Multiplex PCR capability within single run: Up to 6 fluorescence detection channels and independently controlled PCR unit**
- **Single nozzle dispenser**

geneLEAD

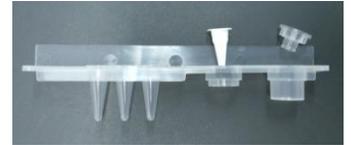
Stage layout and consumables



Tips



Extraction reagent



PCR cartridge

Performance of fully-automated PCR on geneLEAD

Reproducibility

Within-run

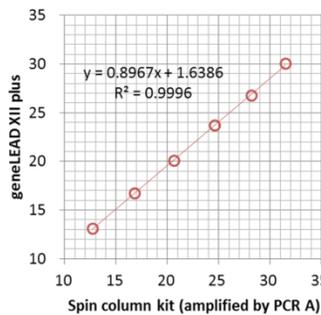
		geneLEAD		Spin column kit	
		Ct	SD	Ct	SD
M13	H	26.47	0.16	27.71	0.40
	L	30.19	0.04	31.61	0.28
MS2	H	31.05	0.07	31.57	0.29
	L	34.56	0.38	34.93	0.55

Between-run

	M13 2 x 10 ⁴ cp		M13 2 x 10 ² cp		MS2 2 x 10 ⁶ cp		MS2 2 x 10 ⁴ cp	
	Ct	SD	Ct	SD	Ct	SD	Ct	SD
Run 1	24.60	0.66	30.88	0.16	27.10	0.82	33.46	0.89
Run 2	24.05	0.42	30.37	0.18	28.08	0.12	35.04	0.69
Run 3	24.59	0.53	31.57	0.36	28.44	0.41	35.18	0.77
Run 4	24.42	0.08	32.58	0.32	28.42	0.77	34.51	1.02
Run 5	25.62	0.23	30.94	0.60	29.79	0.81	35.30	1.01

M13 and MS2 bacteriophage were spiked into human serum. Fully-automated run were processed on geneLEAD XII for 5 times (each run contain 6 replicates).

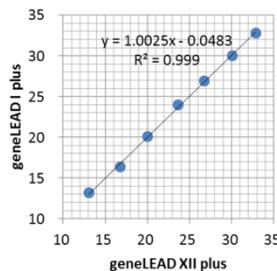
Linearity



copies/sample (200 µl)	Full automation	Manual
	g.L XII plus	Spin column + PCR A
200,000,000	13.08	12.69
20,000,000	16.75	16.80
2,000,000	20.06	20.66
200,000	23.69	24.61
20,000	26.76	28.19
2,000	30.05	31.50
200	32.12	-
Slope	-3.23	-3.78
PCR efficiency (%)	104.0	84.0
y-intercept	37.11	40.54
R2	0.996	0.999

M13 bacteriophage (2x10² to 2x10⁹ copies) were spiked into human serum. Those samples were processed automated real-time PCR run on geneLEAD or manual method using spin column extraction and commercially available real time PCR.

System compatibility



copies/sample (200 µl)	g.LXII	g.LI
200,000,000	13.08	13.23
20,000,000	16.75	16.34
2,000,000	20.06	20.06
200,000	23.69	23.96
20,000	26.76	26.49
2,000	30.05	30.73
200	32.12	32.82
Slope	-3.23	-3.36
PCR efficiency (%)	104.0	98.6
y-intercept	37.11	37.81
R2	0.996	0.996

M13 bacteriophage (2x10² to 2x10⁹ copies) were spiked into human serum. Those samples were processed automated real-time PCR run on geneLEAD XII and geneLEAD I.