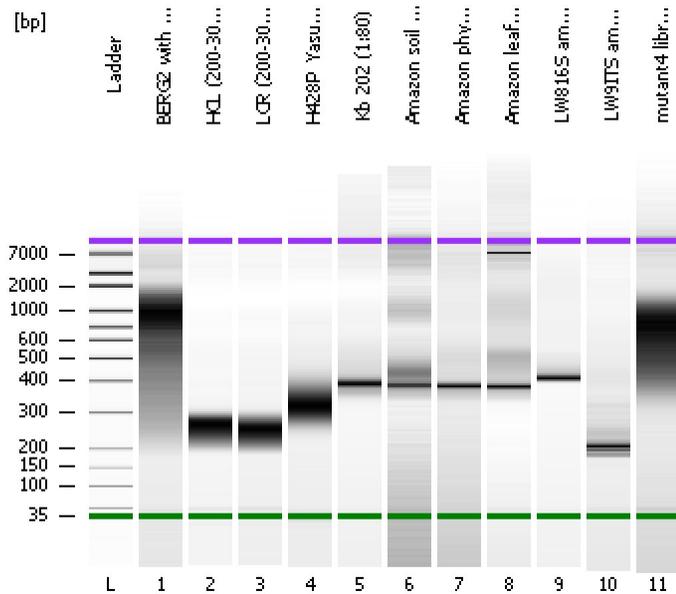


Assay Class: High Sensitivity DNA Assay
Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
Modified: 3/14/2016 4:55:30 PM

Electrophoresis File Run Summary



Instrument Information:

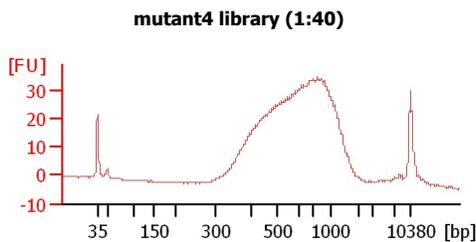
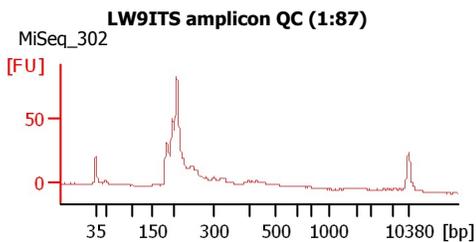
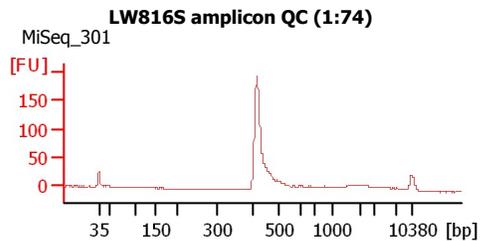
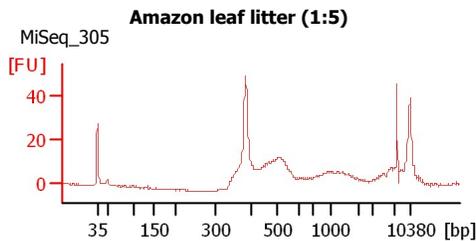
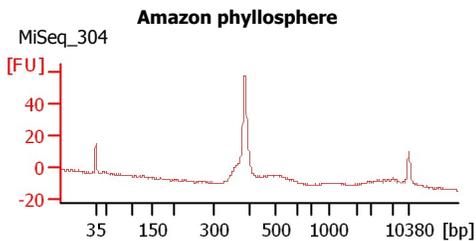
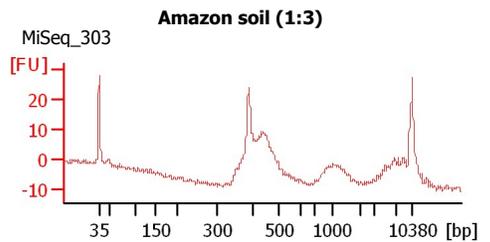
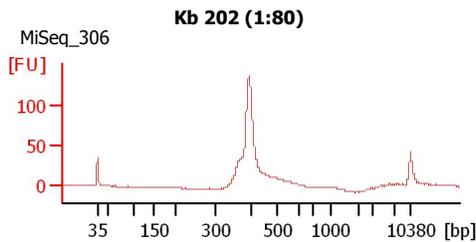
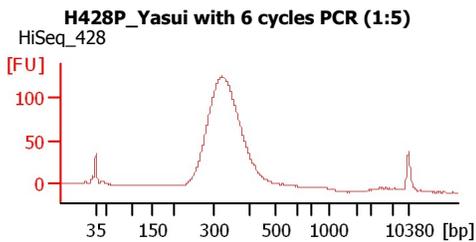
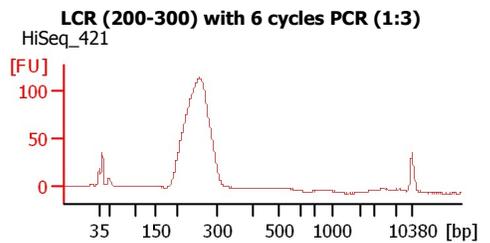
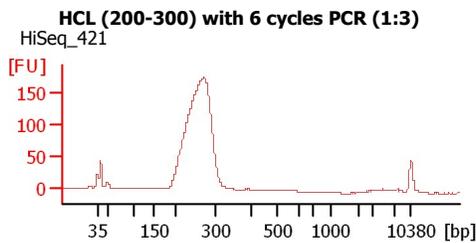
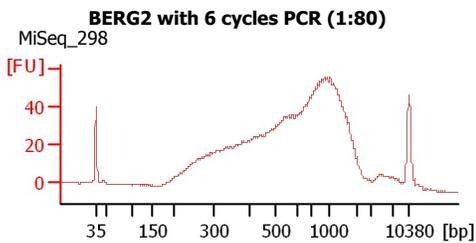
Instrument Name: DE13701086 Firmware: C.01.069
Serial#: DE13701086 Type: G2938B

Assay Information:

Assay Origin Path: C:\Program Files\Agilent\2100 bioanalyzer\2100 expert\assays\dsDNA\High Sensitivity DNA.xsy
Assay Class: High Sensitivity DNA Assay
Version: 1.03
Assay Comments: Copyright © 2003-2010 Agilent Technologies

Chip Information:

Chip Lot #:
Reagent Kit Lot #:
Chip Comments:



Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electrophoresis File Run Summary (Chip Summary)

Sample Name	Sample Comment	Rest. Digest	Status	Observation	Result Label	Result Color
BERG2 with 6 cycles PCR (1:80)	MiSeq_298	<input type="checkbox"/>	✓			
HCL (200-300) with 6 cycles PCR (1:3)	HiSeq_421	<input type="checkbox"/>	✓			
LCR (200-300) with 6 cycles PCR (1:3)	HiSeq_421	<input type="checkbox"/>	✓			
H428P_Yasui with 6 cycles PCR (1:5)	HiSeq_428	<input type="checkbox"/>	✓			
Kb 202 (1:80)	MiSeq_306	<input type="checkbox"/>	✓			
Amazon soil (1:3)	MiSeq_303	<input type="checkbox"/>	✓			
Amazon phyllosphere	MiSeq_304	<input type="checkbox"/>	✓			
Amazon leaf litter (1:5)	MiSeq_305	<input type="checkbox"/>	✓			
LW816S amplicon QC (1:74)	MiSeq_301	<input type="checkbox"/>	✓			
LW9ITS amplicon QC (1:87)	MiSeq_302	<input type="checkbox"/>	✓			
mutant4 library (1:40)		<input type="checkbox"/>	✓			
Ladder		<input type="checkbox"/>	✓			

Chip Lot #

Reagent Kit Lot #

Chip Comments :

Assay Class: High Sensitivity DNA Assay
Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
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Electrophoresis Assay Details

General Analysis Settings

Number of Available Sample and Ladder Wells (Max.) : 12
Minimum Visible Range [s] : 32
Maximum Visible Range [s] : 138
Start Analysis Time Range [s] : 33
End Analysis Time Range [s] : 137.5
Ladder Concentration [pg/μl] : 1950
Uses Standard Area for Ladder Fragments
Lower Marker Concentration [pg/μl] : 125
Upper Marker Concentration [pg/μl] : 75
Used Upper Marker for Quantitation
Standard Curve Fit is Point to Point
Show Data Aligned to Lower and Upper Marker

Integrator Settings

Integration Start Time [s] : 33.05
Integration End Time [s] : 137
Slope Threshold : 0.8
Height Threshold [FU] : 5
Area Threshold : 0.1
Width Threshold [s] : 0.6
Baseline Plateau [s] : 0.5

Filter Settings

Filter Width [s] : 0.5
Polynomial Order : 4

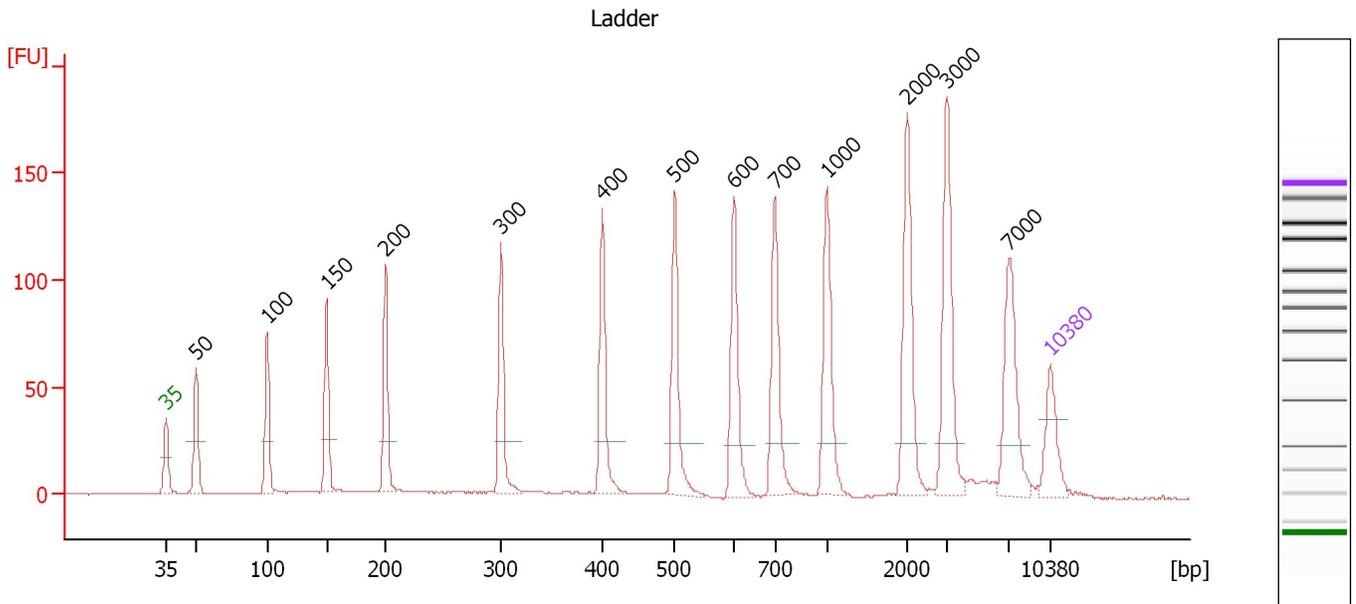
Ladder

Ladder Peak	Size	Area
1	35	160
2	50	210
3	100	208
4	150	221
5	200	242
6	300	270
7	400	305
8	500	306
9	600	336
10	700	321
11	1000	366
12	2000	413
13	3000	411
14	7000	400
15	10380	214

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
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Electropherogram Summary



Overall Results for Ladder

Noise: 0.2

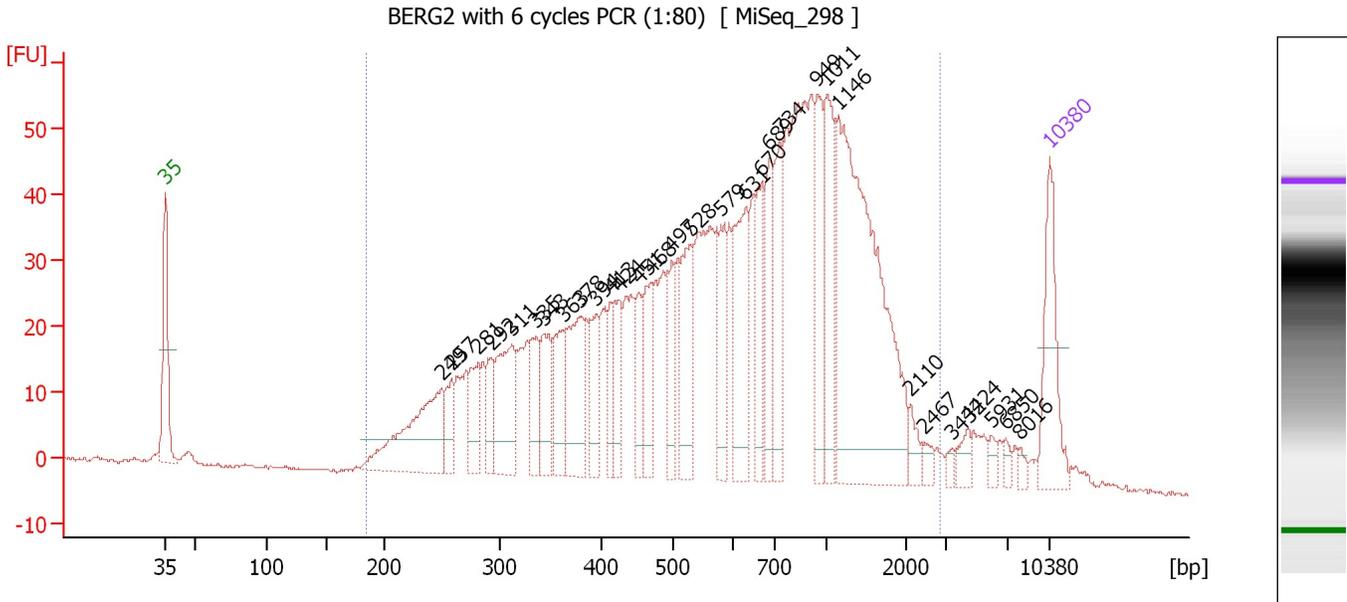
Peak table for Ladder

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	50	150.00	4,545.5	Ladder Peak	45.38
3	100	150.00	2,272.7	Ladder Peak	51.00
4	150	150.00	1,515.2	Ladder Peak	55.72
5	200	150.00	1,136.4	Ladder Peak	60.40
6	300	150.00	757.6	Ladder Peak	69.53
7	400	150.00	568.2	Ladder Peak	77.57
8	500	150.00	454.5	Ladder Peak	83.28
9	600	150.00	378.8	Ladder Peak	87.96
10	700	150.00	324.7	Ladder Peak	91.20
11	1,000	150.00	227.3	Ladder Peak	95.33
12	2,000	150.00	113.6	Ladder Peak	101.67
13	3,000	150.00	75.8	Ladder Peak	104.82
14	7,000	150.00	32.5	Ladder Peak	109.72
15	10,380	75.00	10.9	Upper Marker	113.00

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 1 : BERG2 with 6 cycles PCR (1:80)

Number of peaks found: 31 Corr. Area 1: 1,494.8
 Noise: 0.2

Peak table for sample 1 : BERG2 with 6 cycles PCR (1:80)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	249	174.03	1,058.6		64.88
3	257	40.53	238.5		65.64
4	281	51.24	276.1		67.80
5	292	42.33	219.3		68.84
6	311	109.63	534.0		70.41
7	335	54.81	247.8		72.35
8	343	63.75	281.7		72.98
9	363	65.69	274.6		74.56
10	378	108.78	435.8		75.82
11	394	52.97	203.5		77.12
12	413	42.91	157.3		78.34
13	424	46.53	166.4		78.92
14	451	43.92	147.5		80.50
15	468	62.62	202.8		81.44
16	497	49.19	150.0		83.11
17	528	93.35	267.9		84.59
18	579	67.59	176.9		86.98
19	631	116.94	280.8		88.96
20	670	67.62	152.9		90.22
21	689	68.06	149.6		90.85
22	734	80.11	165.4		91.66
23	949	76.90	122.7		94.63
24	1,011	88.51	132.7		95.40
25	1,146	392.51	519.2		96.25

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...

... Peak table for sample 1 : BERG2 with 6 cycles PCR (1:80)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
26	2,110	14.61	10.5		102.02
27	2,467	9.06	5.6		103.14
28	3,432	5.23	2.3		105.35
29	4,424	14.02	4.8		106.56
30	5,931	8.14	2.1		108.41
31	6,850	6.51	1.4		109.53
32	8,016	5.77	1.1		110.70
33	10,380	75.00	10.9	Upper Marker	113.00

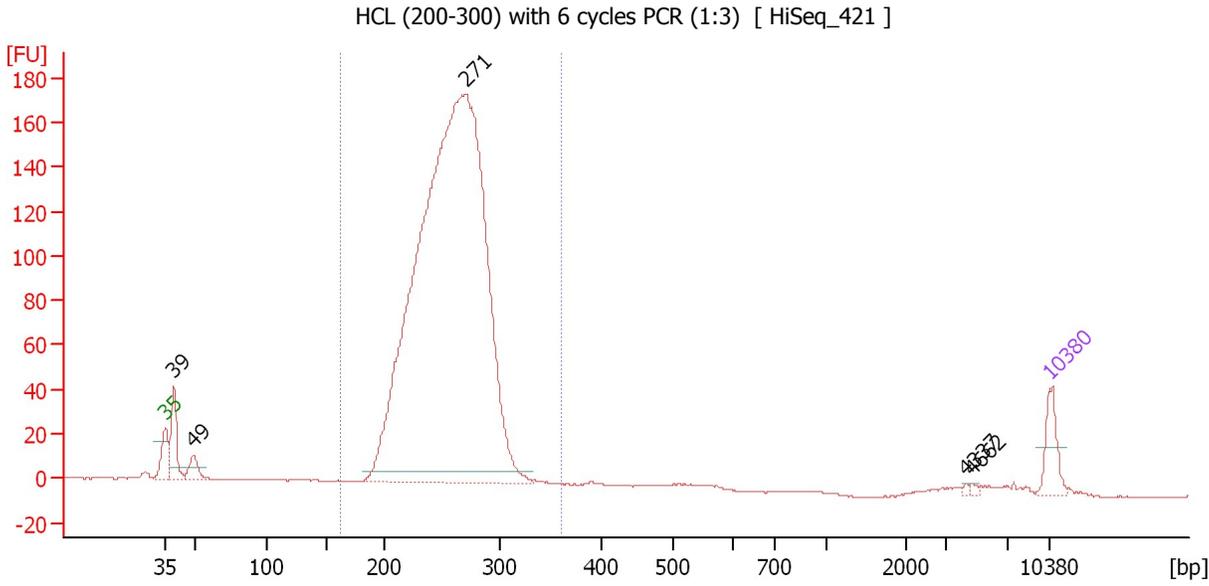
Region table for sample 1 : BERG2 with 6 cycles PCR (1:80)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
184	2,872	755	1,494.8	9,450.7	3,067.02	96	60.5

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 2 : HCL (200-300) with 6 cycles PCR (1:3)

Number of peaks found: 5 Corr. Area 1: 1,788.7
 Noise: 0.2

Peak table for sample 2 : HCL (200-300) with 6 cycles PCR (1:3)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	39	173.45	6,661.0		43.71
3	49	65.03	2,014.2		45.21
4	271	4,546.99	25,422.0		66.88
5	4,337	4.07	1.4		106.46
6	4,662	5.54	1.8		106.85
7	10,380	75.00	10.9	Upper Marker	113.00

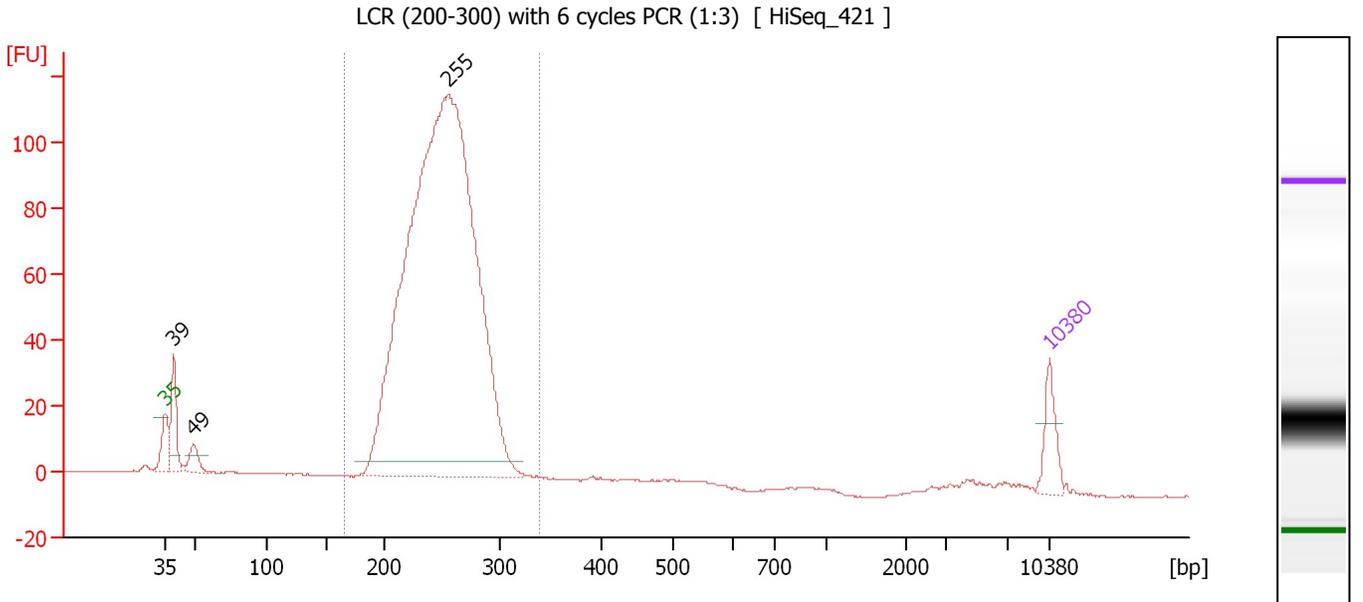
Region table for sample 2 : HCL (200-300) with 6 cycles PCR (1:3)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
163	360	256	1,788.7	28,593.2	4,807.51	92	10.5

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 3 : LCR (200-300) with 6 cycles PCR (1:3)

Number of peaks found: 3 Corr. Area 1: 1,202.9
 Noise: 0.2

Peak table for sample 3 : LCR (200-300) with 6 cycles PCR (1:3)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	39	190.05	7,342.0		43.67
3	49	69.50	2,146.1		45.23
4	255	3,970.15	23,568.5		65.44
5	10,380	75.00	10.9	Upper Marker	113.00

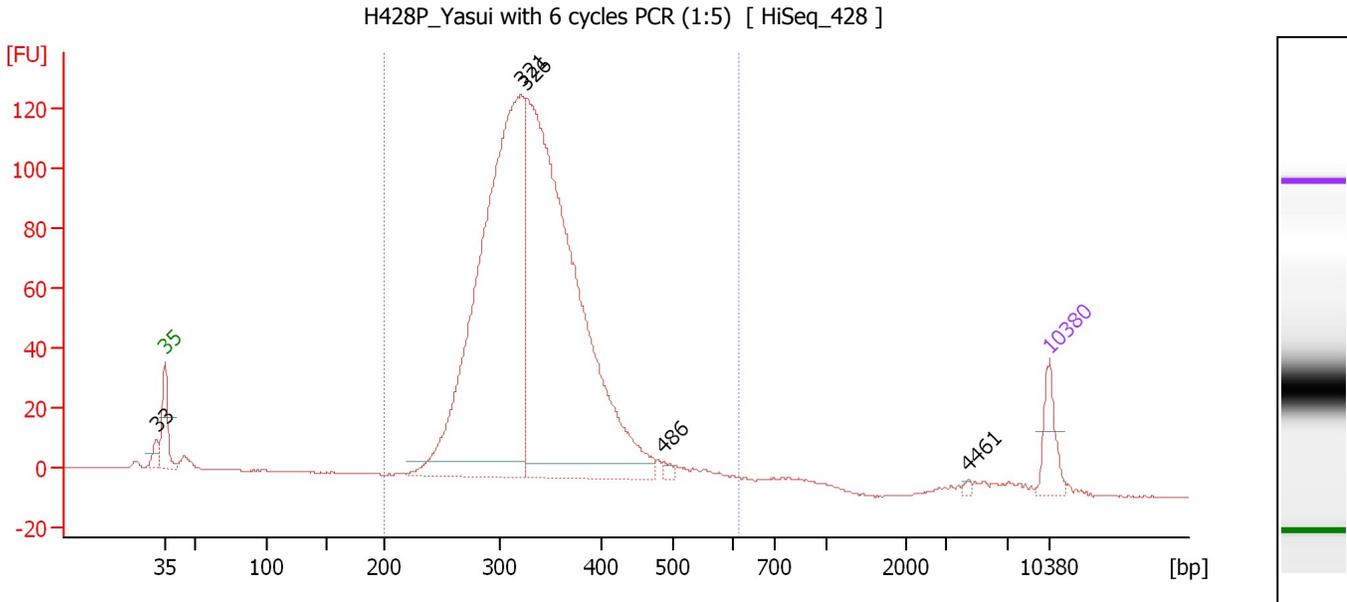
Region table for sample 3 : LCR (200-300) with 6 cycles PCR (1:3)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
166	339	249	1,202.9	25,170.0	4,111.85	90	10.7

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 4 : H428P Yasui with 6 cycles PCR (1:5)

Number of peaks found: 5 Corr. Area 1: 1,614.6
 Noise: 0.2

Peak table for sample 4 : H428P Yasui with 6 cycles PCR (1:5)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	33	0.00	0.0		42.31
2	35	125.00	5,411.3	Lower Marker	43.00
3	321	2,017.69	9,531.9		71.19
4	326	2,213.80	10,293.2		71.61
5	486	14.92	46.5		82.46
6	4,461	6.76	2.3		106.61
7	10,380	75.00	10.9	Upper Marker	113.00

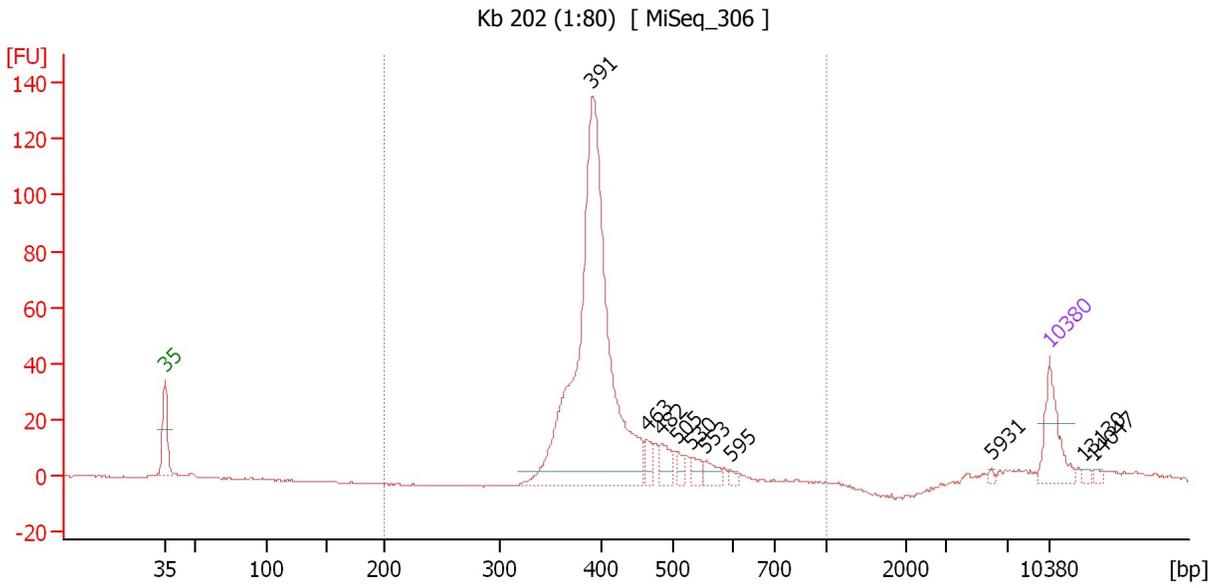
Region table for sample 4 : H428P Yasui with 6 cycles PCR (1:5)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
200	613	337	1,614.6	20,098.7	4,341.16	95	16.0

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 5 : Kb 202 (1:80)

Number of peaks found: 10 Corr. Area 1: 562.7
 Noise: 0.2

Peak table for sample 5 : Kb 202 (1:80)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	391	1,094.44	4,243.7		76.83
3	463	31.48	103.0		81.19
4	482	41.59	130.7		82.26
5	505	17.73	53.2		83.53
6	530	21.33	60.9		84.70
7	553	25.23	69.1		85.78
8	595	8.38	21.3		87.75
9	5,931	4.00	1.0		108.41
10	10,380	75.00	10.9	Upper Marker	113.00
11	13,130	0.00	0.0		115.67
12	14,047	0.00	0.0		116.56

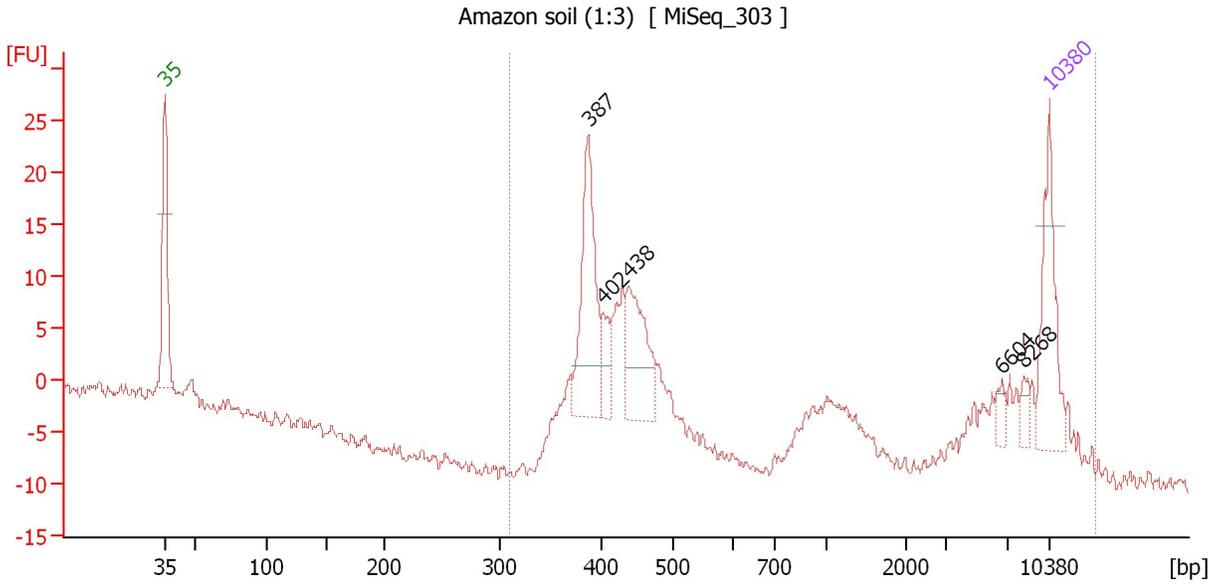
Region table for sample 5 : Kb 202 (1:80)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
200	1,000	416	562.7	4,609.2	1,238.83	89	14.9

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 6 : Amazon soil (1:3)

Number of peaks found: 5 Corr. Area 1: 162.0
 Noise: 0.7

Peak table for sample 6 : Amazon soil (1:3)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	387	147.20	576.4		76.52
3	402	29.15	109.7		77.71
4	438	96.08	332.7		79.72
5	6,604	10.53	2.4		109.23
6	8,268	10.41	1.9		110.95
7	10,380	75.00	10.9	Upper Marker	113.00

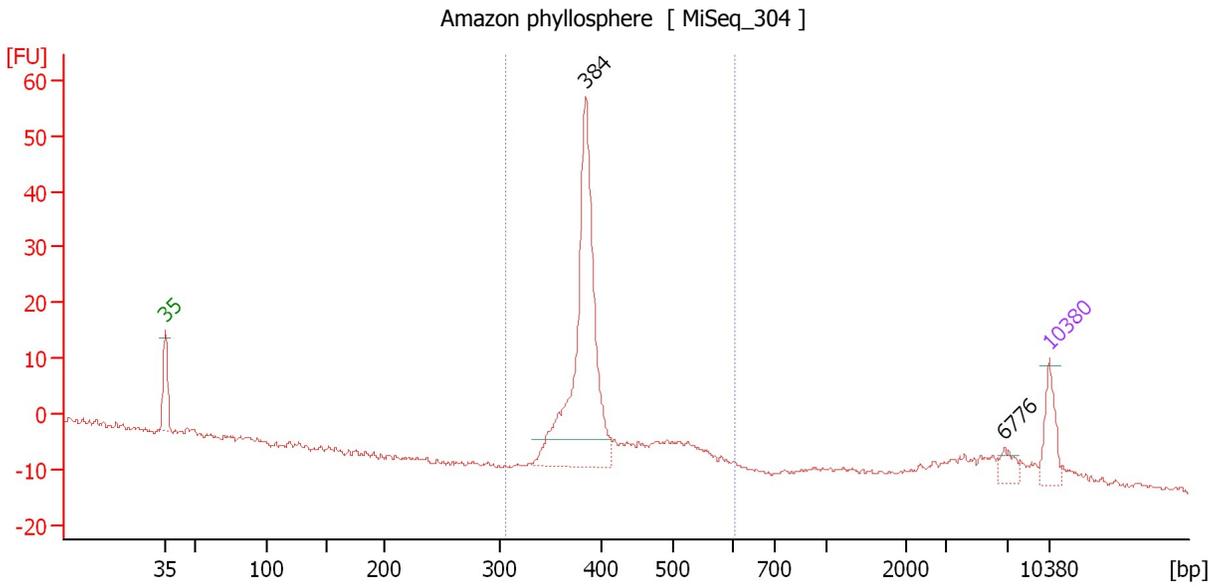
Region table for sample 6 : Amazon soil (1:3)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
309	14,153	3,843	162.0	1,478.8	494.03	94	100.0

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 7 : Amazon phyllosphere

Number of peaks found: 2 Corr. Area 1: 145.2
 Noise: 0.4

Peak table for sample 7 : Amazon phyllosphere

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	384	816.61	3,223.6		76.27
3	6,776	33.07	7.4		109.44
4	10,380	75.00	10.9	Upper Marker	113.00

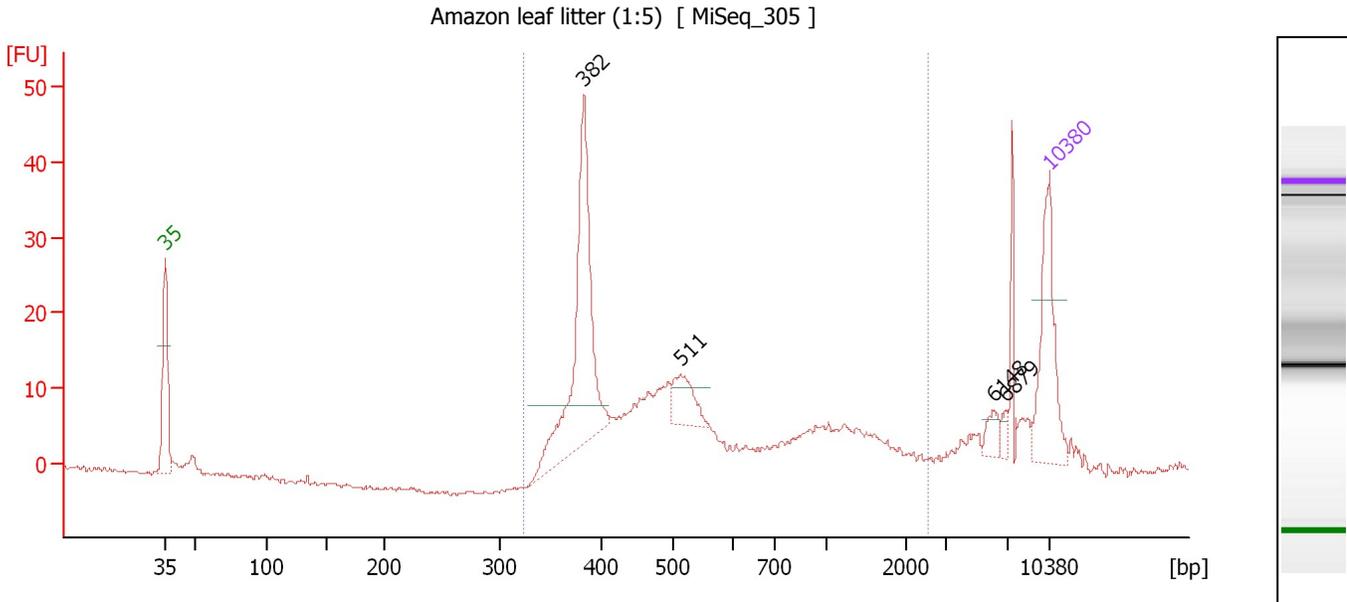
Region table for sample 7 : Amazon phyllosphere

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
305	603	400	145.2	3,148.3	820.28	80	11.0

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 8 : Amazon leaf litter (1:5)

Number of peaks found: 4 Corr. Area 1: 305.5
 Noise: 0.3

Peak table for sample 8 : Amazon leaf litter (1:5)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	382	224.92	891.1		76.16
3	511	38.42	113.8		83.82
4	6,148	11.98	3.0		108.67
5	6,879	6.78	1.5		109.57
6	10,380	75.00	10.9	Upper Marker	113.00

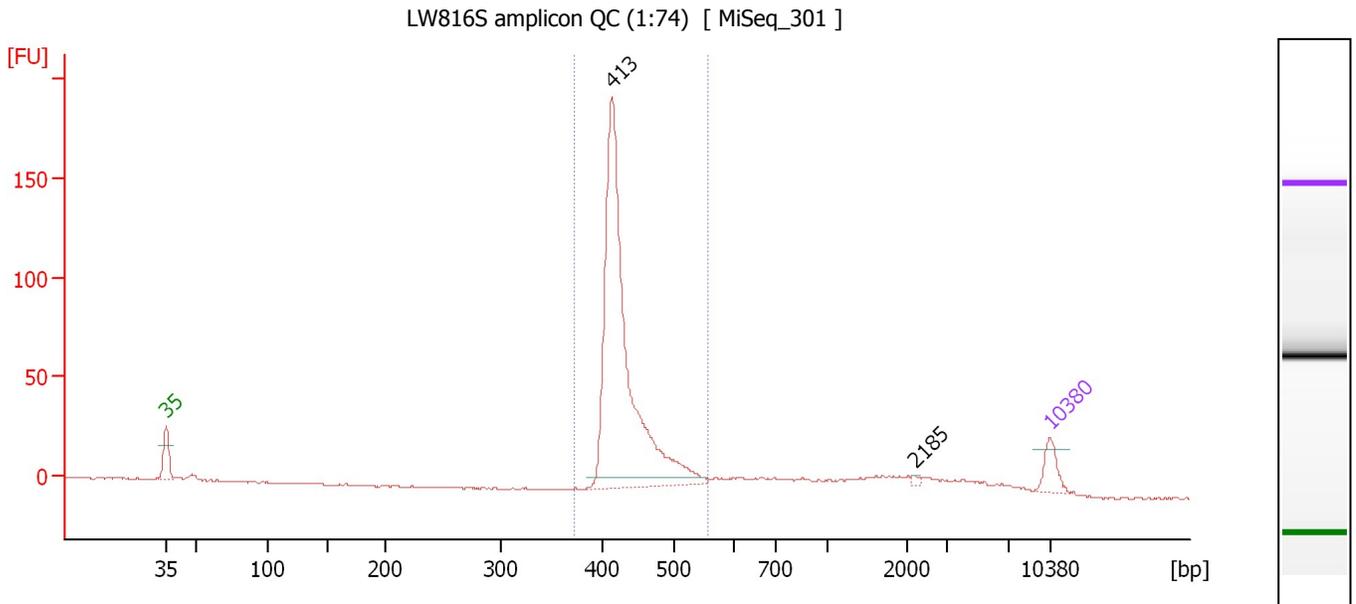
Region table for sample 8 : Amazon leaf litter (1:5)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
324	2,544	686	305.5	2,297.6	756.30	76	66.3

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 9 : LW816S amplicon QC (1:74)

Number of peaks found: 2 Corr. Area 1: 492.9
 Noise: 0.3

Peak table for sample 9 : LW816S amplicon QC (1:74)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	413	1,812.91	6,648.6		78.32
3	2,185	8.77	6.1		102.25
4	10,380	75.00	10.9	Upper Marker	113.00

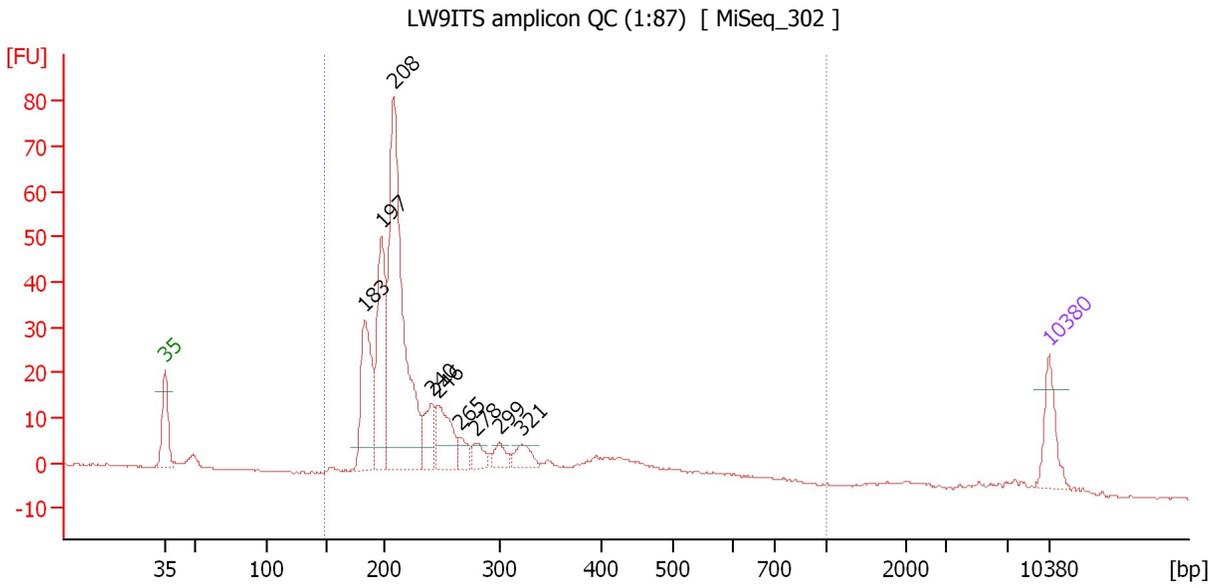
Region table for sample 9 : LW816S amplicon QC (1:74)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
372	557	432	492.9	6,373.2	1,811.81	77	7.4

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 10 : LW9ITS amplicon QC (1:87)

Number of peaks found: 9 Corr. Area 1: 472.8
 Noise: 0.2

Peak table for sample 10 : LW9ITS amplicon QC (1:87)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	183	280.85	2,327.8		58.79
3	197	332.57	2,553.7		60.15
4	208	845.50	6,167.2		61.10
5	240	96.81	610.6		64.07
6	246	134.11	825.0		64.62
7	265	39.86	227.9		66.33
8	278	37.61	204.8		67.54
9	299	36.33	184.0		69.45
10	321	46.82	221.0		71.21
11	10,380	75.00	10.9	Upper Marker	113.00

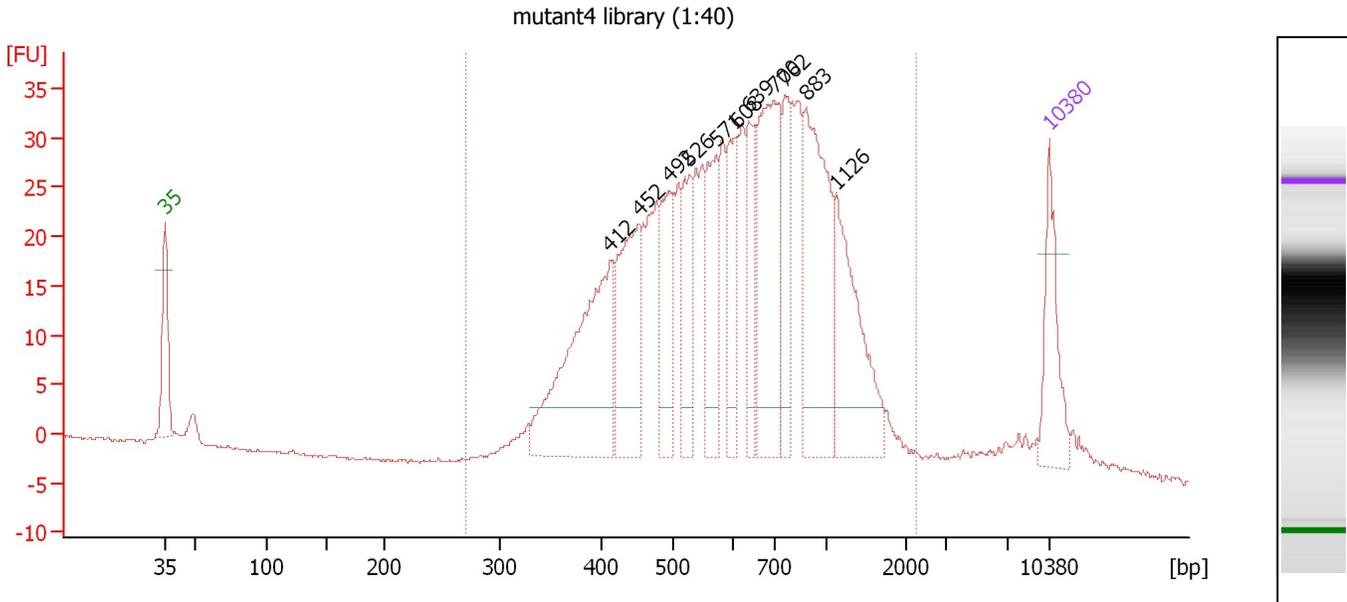
Region table for sample 10 : LW9ITS amplicon QC (1:87)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. lor [pg/μl]	% of Total	Size distribution in CV [%]
150	1,000	267	472.8	14,873.7	2,281.96	95	41.5

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Electropherogram Summary Continued ...



Overall Results for sample 11 : mutant4 library (1:40)

Number of peaks found: 11 Corr. Area 1: 771.1
 Noise: 0.1

Peak table for sample 11 : mutant4 library (1:40)

Peak	Size [bp]	Conc. [pg/μl]	Molarity [pmol/l]	Observations	Aligned Migration Time [s]
1	35	125.00	5,411.3	Lower Marker	43.00
2	412	317.94	1,169.5		78.25
3	452	182.07	610.9		80.52
4	492	114.81	353.4		82.83
5	526	90.07	259.5		84.50
6	571	110.98	294.4		86.61
7	608	97.76	243.6		88.22
8	639	80.08	189.8		89.23
9	700	236.54	512.0		91.19
10	762	89.60	178.2		92.05
11	883	232.12	398.5		93.71
12	1,126	167.90	225.9		96.13
13	10,380	75.00	10.9	Upper Marker	113.00

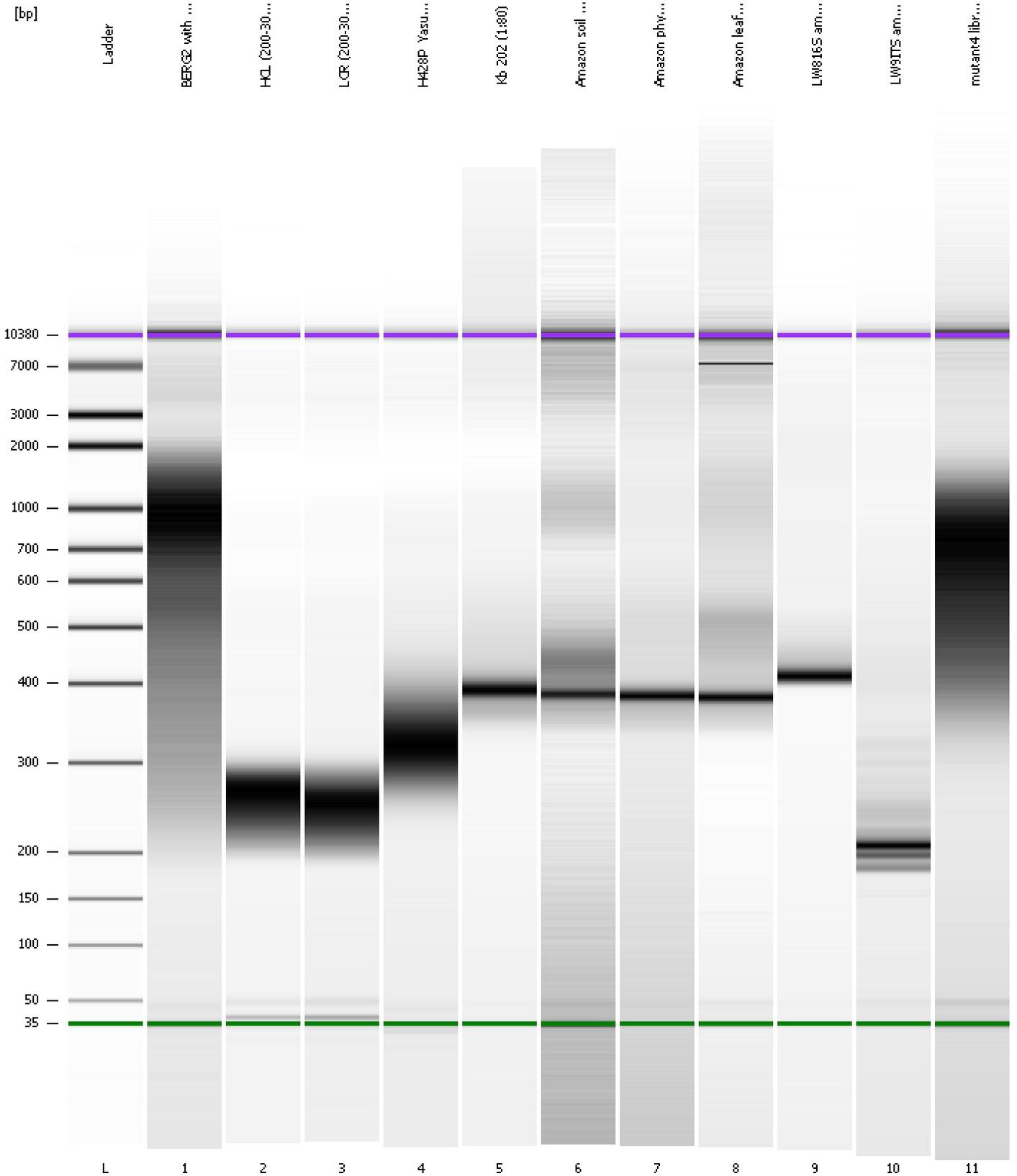
Region table for sample 11 : mutant4 library (1:40)

From [bp]	To [bp]	Average Size [bp]	Corr. Area	Molarity [pmol/l]	Co Conc. [pg/μl]	% of Total	Size distribution in CV [%]
271	2,262	701	771.1	6,403.7	2,437.65	95	44.6

Assay Class: High Sensitivity DNA Assay
Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
Modified: 3/14/2016 4:55:30 PM

Gel Image



Assay Class: High Sensitivity DNA Assay
 Data Path: C:\... bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad

Created: 3/14/2016 3:44:01 PM
 Modified: 3/14/2016 4:55:30 PM

Run Logbook

Description	Number	Source	Category	Sub Category	Time	Time Zone	User	Host
Run ended on port 1 (Number of wells acquired: 12)		Instrument	Run		3/14/2016 4:25:18 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Run started on port 1 (File: C:\Program Files\Agilent\2100 bioanalyzer\2100 expert\data\2016-03-14\2016-03-14_001.xad)		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Product Number : G2938B		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Name :		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Vendor : Agilent Technologies		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Serial# : DE13701086		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Firmware : C.01.069		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1
Cartridge : Electrode		Instrument	Run		3/14/2016 3:44:07 PM	(GMT --07:00) Pacific Standard Time	UC Davis	D8XSMGH1