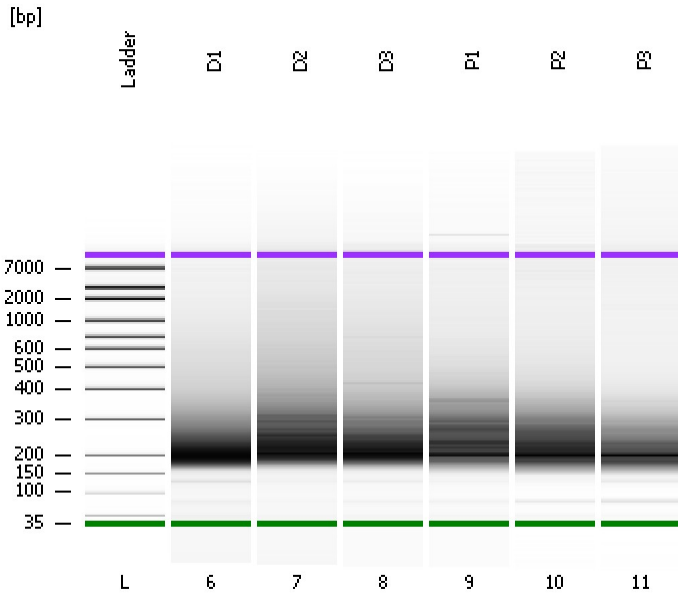


Assay Class: High Sensitivity DNA Assay
Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
Modified: 12/13/2016 10:59:54 AM

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

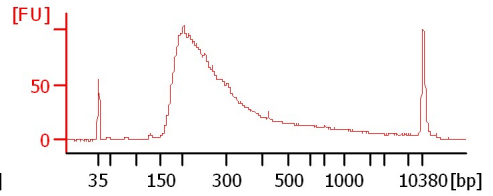
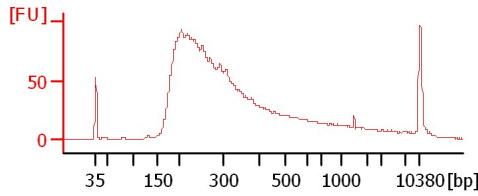
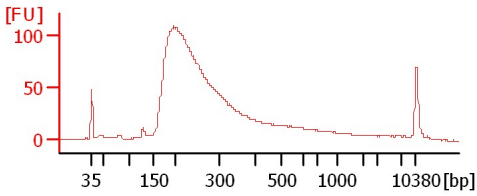
Chip Information:

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

D1

D2

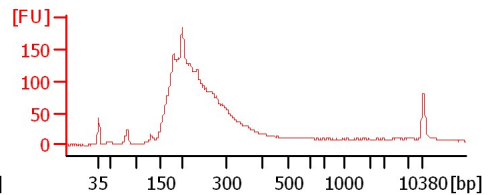
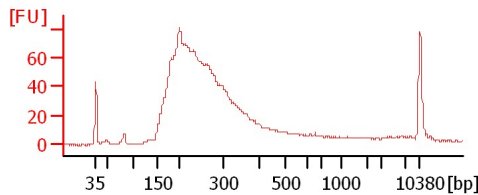
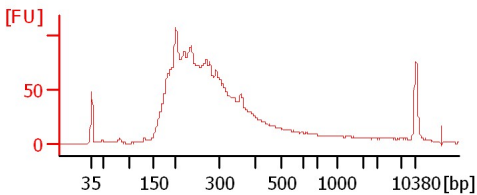
D3



P1

P2

P3



Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electrophoresis File Run Summary (Chip Summary)

| Sample Name | Sample Comment | Rest. Digest | Status | Observation | Result Label | Result Color |
|-------------|----------------|--------------------------|--------|-------------|--------------|--------------|
| D1 | | <input type="checkbox"/> | ✓ | | | |
| D2 | | <input type="checkbox"/> | ✓ | | | |
| D3 | | <input type="checkbox"/> | ✓ | | | |
| P1 | | <input type="checkbox"/> | ✓ | | | |
| P2 | | <input type="checkbox"/> | ✓ | | | |
| P3 | | <input type="checkbox"/> | ✓ | | | |
| Ladder | | <input type="checkbox"/> | ✓ | | | |

Chip Lot #

Reagent Kit Lot #

Chip Comments :

Assay Class: High Sensitivity DNA Assay
Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
Modified: 12/13/2016 10:59:54 AM

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

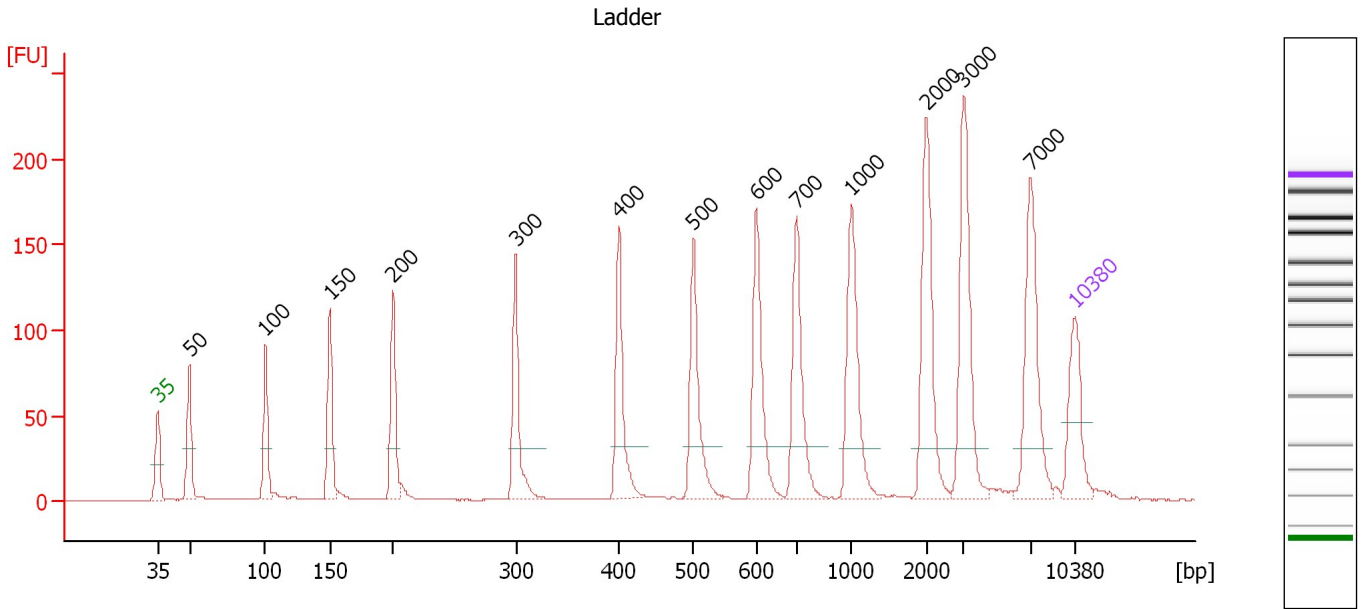
Ladder

| 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:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary



Overall Results for Ladder

Noise: 0.2

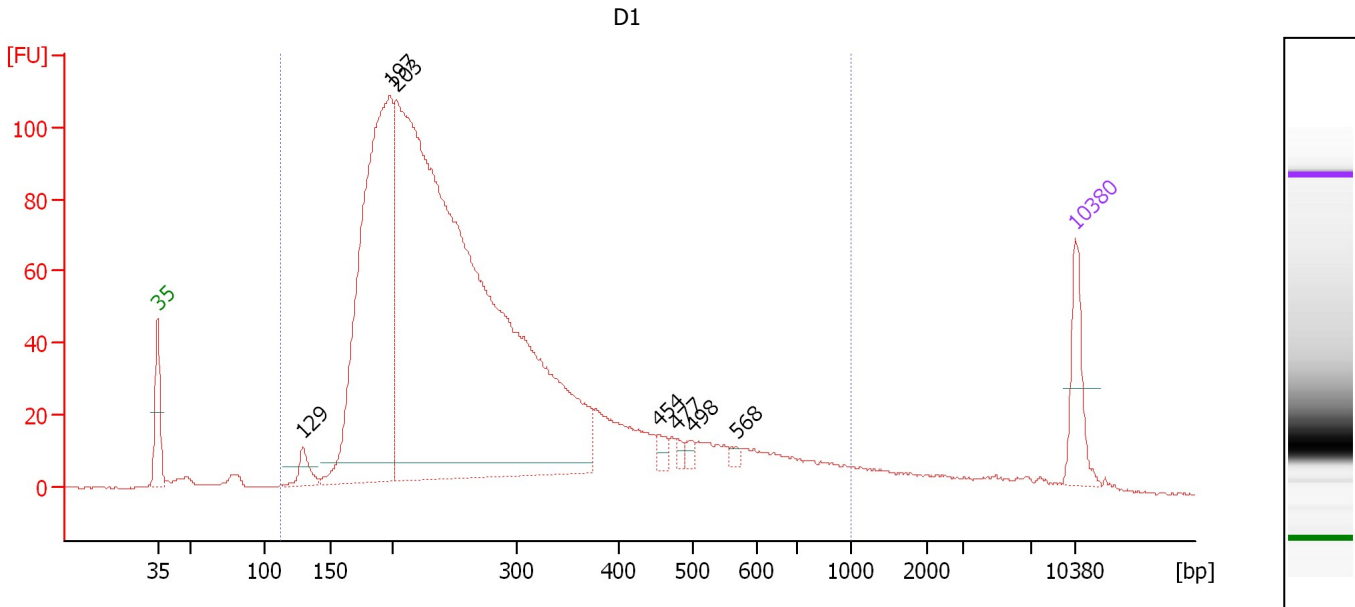
Peak table for Ladder

| 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 | 45.44 |
| 3 | 100 | 150.00 | 2,272.7 | Ladder Peak | 51.23 |
| 4 | 150 | 150.00 | 1,515.2 | Ladder Peak | 56.15 |
| 5 | 200 | 150.00 | 1,136.4 | Ladder Peak | 60.97 |
| 6 | 300 | 150.00 | 757.6 | Ladder Peak | 70.33 |
| 7 | 400 | 150.00 | 568.2 | Ladder Peak | 78.22 |
| 8 | 500 | 150.00 | 454.5 | Ladder Peak | 83.87 |
| 9 | 600 | 150.00 | 378.8 | Ladder Peak | 88.69 |
| 10 | 700 | 150.00 | 324.7 | Ladder Peak | 91.76 |
| 11 | 1,000 | 150.00 | 227.3 | Ladder Peak | 95.95 |
| 12 | 2,000 | 150.00 | 113.6 | Ladder Peak | 101.65 |
| 13 | 3,000 | 150.00 | 75.8 | Ladder Peak | 104.52 |
| 14 | 7,000 | 150.00 | 32.5 | Ladder Peak | 109.59 |
| 15 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...



Overall Results for sample 6 : D1

Number of peaks found: 7 Corr. Area 1: 2,208.4
 Noise: 0.2

Peak table for sample 6 : D1

| 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 | 129 | 44.94 | 529.6 | | 54.04 |
| 3 | 197 | 1,130.53 | 8,680.1 | | 60.72 |
| 4 | 203 | 3,042.55 | 22,737.3 | | 61.23 |
| 5 | 454 | 18.00 | 60.1 | | 81.26 |
| 6 | 477 | 11.62 | 36.9 | | 82.60 |
| 7 | 498 | 12.49 | 38.0 | | 83.78 |
| 8 | 568 | 9.53 | 25.4 | | 87.17 |
| 9 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |

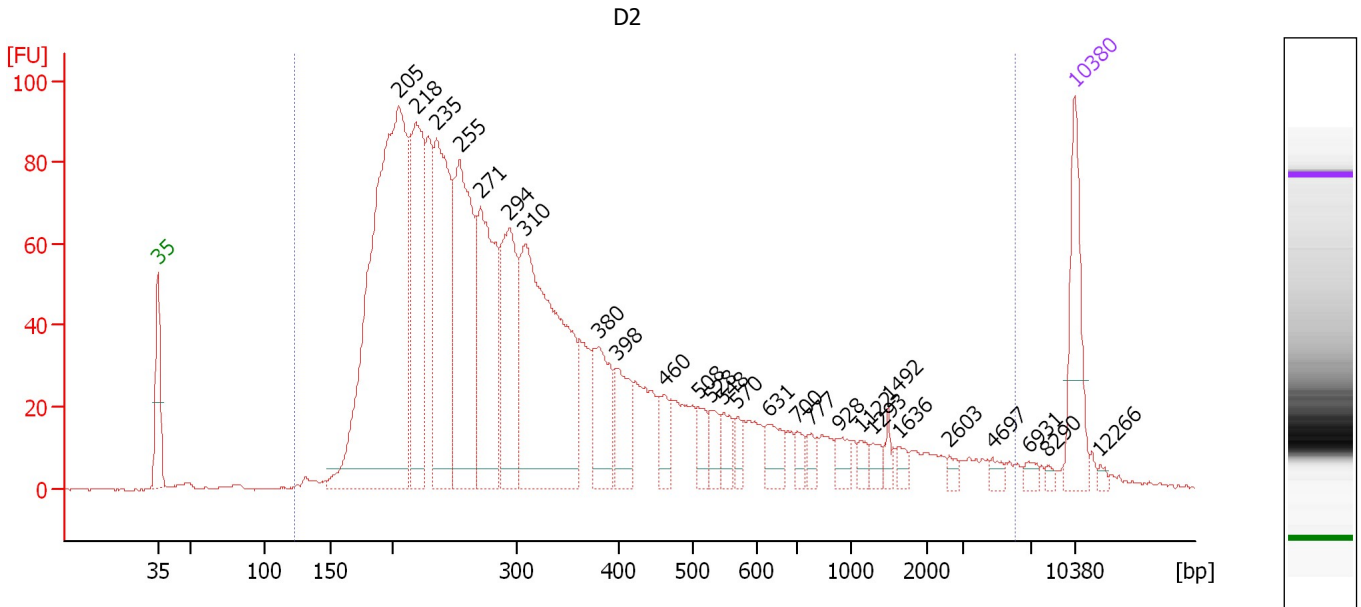
Region table for sample 6 : D1

| From [bp] | To [bp] | Average Size [bp] | Corr. Area | Molarity [pmol/l] | Co Conc. [pg/μl] | % of Total | Size distribution in CV [%] |
|-----------|---------|-------------------|------------|-------------------|------------------|------------|-----------------------------|
| 112 | 1,000 | 294 | 2,208.4 | 29,138.6 | 4,636.97 | 95 | 47.5 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...



Overall Results for sample 7 : D2

Number of peaks found: 27 Corr. Area 1: 2,426.5
 Noise: 0.2

Peak table for sample 7 : D2

| 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 | 205 | 783.23 | 5,797.8 | | 61.41 |
| 3 | 218 | 261.19 | 1,811.8 | | 62.70 |
| 4 | 235 | 301.18 | 1,937.9 | | 64.29 |
| 5 | 255 | 288.33 | 1,715.0 | | 66.09 |
| 6 | 271 | 244.85 | 1,367.8 | | 67.64 |
| 7 | 294 | 182.65 | 940.3 | | 69.80 |
| 8 | 310 | 421.12 | 2,061.2 | | 71.08 |
| 9 | 380 | 88.81 | 354.1 | | 76.64 |
| 10 | 398 | 61.52 | 234.1 | | 78.08 |
| 11 | 460 | 31.03 | 102.1 | | 81.63 |
| 12 | 508 | 24.29 | 72.5 | | 84.25 |
| 13 | 528 | 24.13 | 69.2 | | 85.23 |
| 14 | 548 | 23.60 | 65.2 | | 86.20 |
| 15 | 570 | 15.79 | 42.0 | | 87.23 |
| 16 | 631 | 29.92 | 71.8 | | 89.65 |
| 17 | 700 | 13.15 | 28.5 | | 91.76 |
| 18 | 777 | 12.12 | 23.6 | | 92.84 |
| 19 | 928 | 18.31 | 29.9 | | 94.95 |
| 20 | 1,122 | 11.05 | 14.9 | | 96.64 |
| 21 | 1,293 | 12.57 | 14.7 | | 97.62 |
| 22 | 1,492 | 9.64 | 9.8 | | 98.75 |
| 23 | 1,636 | 9.32 | 8.6 | | 99.58 |
| 24 | 2,603 | 6.96 | 4.1 | | 103.38 |
| 25 | 4,697 | 8.13 | 2.6 | | 106.67 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...

... Peak table for sample 7 : D2

| Peak | Size [bp] | Conc. [pg/μl] | Molarity [pmol/l] | Observations | Aligned Migration Time [s] |
|------|-----------|---------------|-------------------|--------------|----------------------------|
| 26 | 6,931 | 7.39 | 1.6 | | 109.50 |
| 27 | 8,290 | 3.41 | 0.6 | | 110.89 |
| 28 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |
| 29 | 12,266 | 0.00 | 0.0 | | 114.90 |

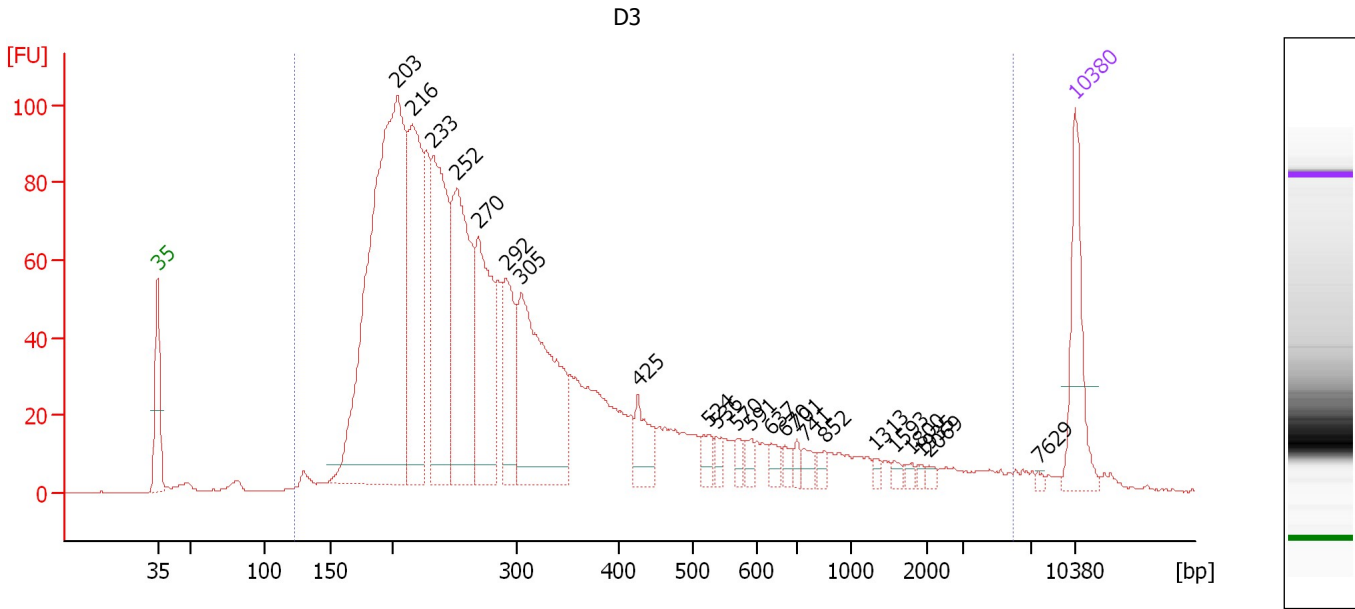
Region table for sample 7 : D2

| From [bp] | To [bp] | Average Size [bp] | Corr. Area | Molarity [pmol/l] | Co Conc. lor [pg/μl] | % of Total | Size distribution in CV [%] |
|-----------|---------|-------------------|------------|-------------------|----------------------|------------|-----------------------------|
| 122 | 6,130 | 492 | 2,426.5 | 19,411.5 | 3,513.26 | 97 | 100.0 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...



Overall Results for sample 8 : D3

Number of peaks found: 23 Corr. Area 1: 2,234.7
 Noise: 0.2


Peak table for sample 8 : D3

| 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 | 203 | 809.34 | 6,027.7 | | 61.30 |
| 3 | 216 | 271.58 | 1,904.3 | | 62.48 |
| 4 | 233 | 277.48 | 1,807.8 | | 64.02 |
| 5 | 252 | 286.96 | 1,726.8 | | 65.82 |
| 6 | 270 | 195.42 | 1,096.9 | | 67.52 |
| 7 | 292 | 115.84 | 601.3 | | 69.57 |
| 8 | 305 | 294.39 | 1,460.6 | | 70.75 |
| 9 | 425 | 45.28 | 161.4 | | 79.64 |
| 10 | 524 | 18.23 | 52.7 | | 85.04 |
| 11 | 536 | 11.87 | 33.6 | | 85.61 |
| 12 | 570 | 11.70 | 31.1 | | 87.25 |
| 13 | 591 | 12.68 | 32.5 | | 88.28 |
| 14 | 637 | 13.52 | 32.2 | | 89.82 |
| 15 | 670 | 10.13 | 22.9 | | 90.85 |
| 16 | 701 | 9.29 | 20.1 | | 91.77 |
| 17 | 741 | 11.77 | 24.1 | | 92.34 |
| 18 | 852 | 8.38 | 14.9 | | 93.88 |
| 19 | 1,313 | 5.15 | 5.9 | | 97.74 |
| 20 | 1,593 | 5.64 | 5.4 | | 99.33 |
| 21 | 1,800 | 4.16 | 3.5 | | 100.51 |
| 22 | 1,935 | 3.65 | 2.9 | | 101.28 |
| 23 | 2,069 | 4.68 | 3.4 | | 101.85 |
| 24 | 7,629 | 2.61 | 0.5 | | 110.22 |
| 25 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |

Assay Class: High Sensitivity DNA Assay
Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
Modified: 12/13/2016 10:59:54 AM

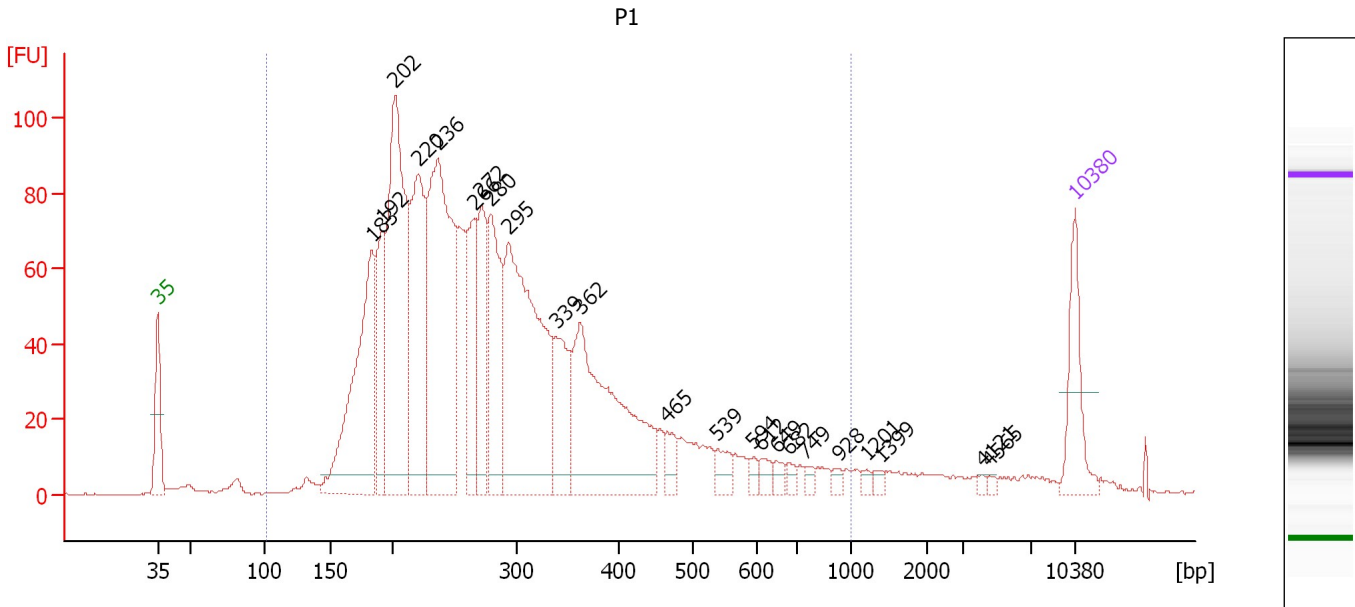
Electropherogram Summary Continued ...**... Region table for sample 8 : D3**

| From [bp] | To [bp] | Average Size [bp] | Corr. Area | Molarity [pmol/l] | Co Conc. lor [pg/μl] | % of Total | Size distribution in CV [%] |
|----------------------|----------------|------------------------------|-----------------------|------------------------------|--|-----------------------|--|
| 122 | 5,941 | 448 | 2,234.7 | 18,580.7 |  3,195.52 | 96 | 100.0 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...



Overall Results for sample 9 : P1

Number of peaks found: 23 Corr. Area 1: 2,143.8
 Noise: 0.1

Peak table for sample 9 : P1

| 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 | 394.53 | 3,261.5 | | 59.36 |
| 3 | 192 | 159.90 | 1,263.4 | | 60.18 |
| 4 | 202 | 513.68 | 3,855.1 | | 61.15 |
| 5 | 220 | 302.49 | 2,078.8 | | 62.89 |
| 6 | 236 | 548.19 | 3,514.5 | | 64.37 |
| 7 | 266 | 159.46 | 908.8 | | 67.13 |
| 8 | 272 | 163.03 | 908.6 | | 67.70 |
| 9 | 280 | 209.25 | 1,134.3 | | 68.41 |
| 10 | 295 | 511.39 | 2,628.1 | | 69.84 |
| 11 | 339 | 122.56 | 547.4 | | 73.42 |
| 12 | 362 | 390.87 | 1,636.4 | | 75.21 |
| 13 | 465 | 29.49 | 96.0 | | 81.91 |
| 14 | 539 | 25.28 | 71.1 | | 85.75 |
| 15 | 594 | 11.77 | 30.0 | | 88.41 |
| 16 | 612 | 14.90 | 36.9 | | 89.07 |
| 17 | 649 | 12.62 | 29.5 | | 90.20 |
| 18 | 682 | 9.15 | 20.3 | | 91.22 |
| 19 | 749 | 8.77 | 17.7 | | 92.44 |
| 20 | 928 | 8.22 | 13.4 | | 94.95 |
| 21 | 1,201 | 6.38 | 8.0 | | 97.10 |
| 22 | 1,399 | 6.77 | 7.3 | | 98.22 |
| 23 | 4,121 | 4.24 | 1.6 | | 105.94 |
| 24 | 4,565 | 3.99 | 1.3 | | 106.51 |
| 25 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |


Assay Class: High Sensitivity DNA Assay
Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...

... Region table for sample 9 :

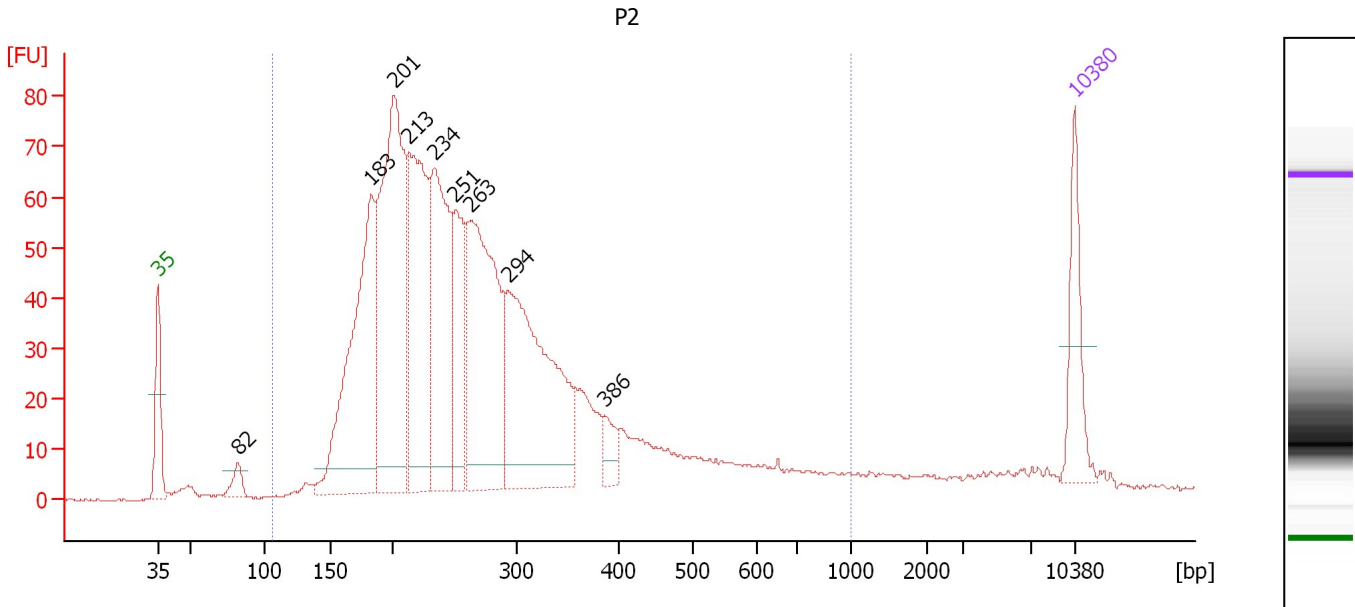
P1

| From [bp] | To [bp] | Average Size [bp] | Corr. Area | Molarity [pmol/l] | Co Conc. lor [pg/μl] | % of Total | Size distribution in CV [%] |
|-----------|---------|-------------------|------------|-------------------|--|------------|-----------------------------|
| 100 | 1,000 | 304 | 2,143.8 | 23,395.0 |  3,932.99 | 94 | 43.2 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...



Overall Results for sample 10 : P2

Number of peaks found: 9 Corr. Area 1: 1,572.0
 Noise: 0.3

Peak table for sample 10 : P2

| 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 | 82 | 26.79 | 497.6 | | 49.10 |
| 3 | 183 | 474.70 | 3,939.1 | | 59.30 |
| 4 | 201 | 564.99 | 4,265.9 | | 61.04 |
| 5 | 213 | 369.41 | 2,624.3 | | 62.22 |
| 6 | 234 | 322.02 | 2,089.1 | | 64.11 |
| 7 | 251 | 167.27 | 1,011.6 | | 65.70 |
| 8 | 263 | 427.60 | 2,467.3 | | 66.83 |
| 9 | 294 | 441.73 | 2,277.9 | | 69.75 |
| 10 | 386 | 32.80 | 128.7 | | 77.13 |
| 11 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |

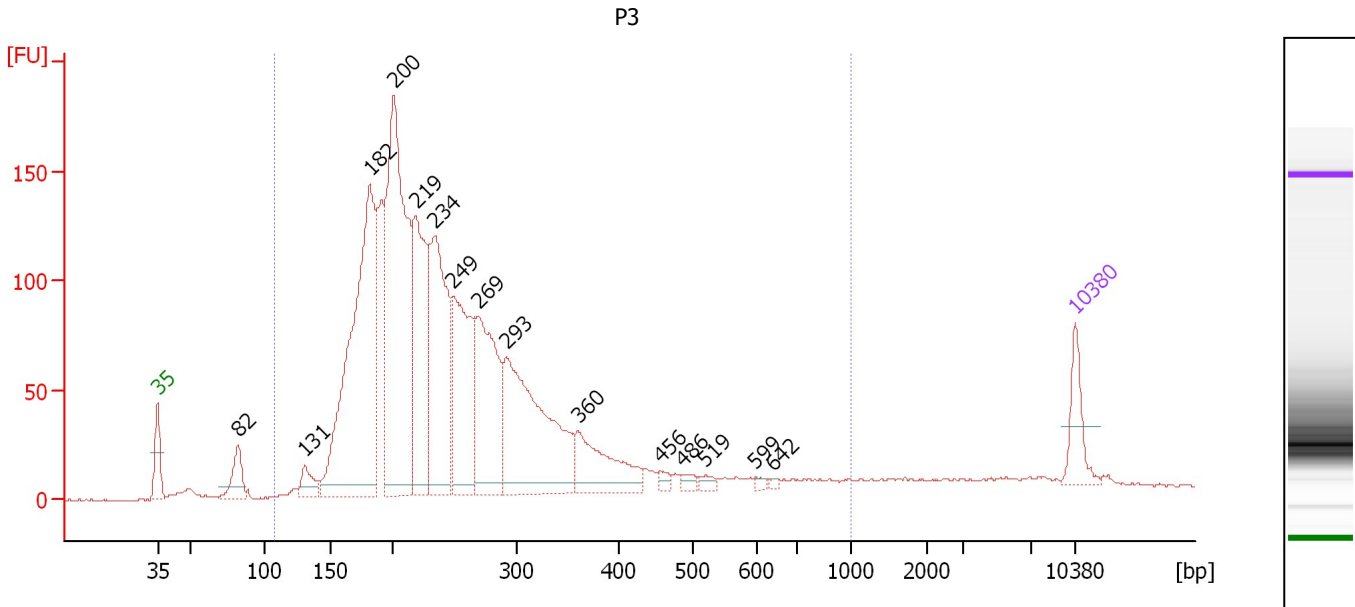
Region table for sample 10 : P2

| From [bp] | To [bp] | Average Size [bp] | Corr. Area | Molarity [pmol/l] | Co Conc. lor [pg/μl] | % of Total | Size distribution in CV [%] |
|-----------|---------|-------------------|------------|-------------------|----------------------|------------|-----------------------------|
| 105 | 1,000 | 285 | 1,572.0 | 20,622.9 | 3,287.41 | 94 | 43.6 |

Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

Electropherogram Summary Continued ...



Overall Results for sample 11 : P3

Number of peaks found: 15 Corr. Area 1: 2,727.4
 Noise: 0.5

Peak table for sample 11 : P3

| 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 | 82 | 99.42 | 1,830.6 | | 49.18 |
| 3 | 131 | 63.04 | 729.9 | | 54.27 |
| 4 | 182 | 1,135.39 | 9,472.1 | | 59.20 |
| 5 | 200 | 1,062.90 | 8,033.2 | | 61.02 |
| 6 | 219 | 465.79 | 3,225.6 | | 62.73 |
| 7 | 234 | 565.89 | 3,667.5 | | 64.14 |
| 8 | 249 | 422.66 | 2,574.2 | | 65.54 |
| 9 | 269 | 438.88 | 2,469.1 | | 67.46 |
| 10 | 293 | 618.26 | 3,201.0 | | 69.64 |
| 11 | 360 | 209.26 | 879.8 | | 75.09 |
| 12 | 456 | 18.36 | 61.0 | | 81.38 |
| 13 | 486 | 18.64 | 58.1 | | 83.09 |
| 14 | 519 | 17.28 | 50.4 | | 84.80 |
| 15 | 599 | 8.74 | 22.1 | | 88.65 |
| 16 | 642 | 6.55 | 15.4 | | 90.00 |
| 17 | 10,380 | 75.00 | 10.9 | Upper Marker | 113.00 |

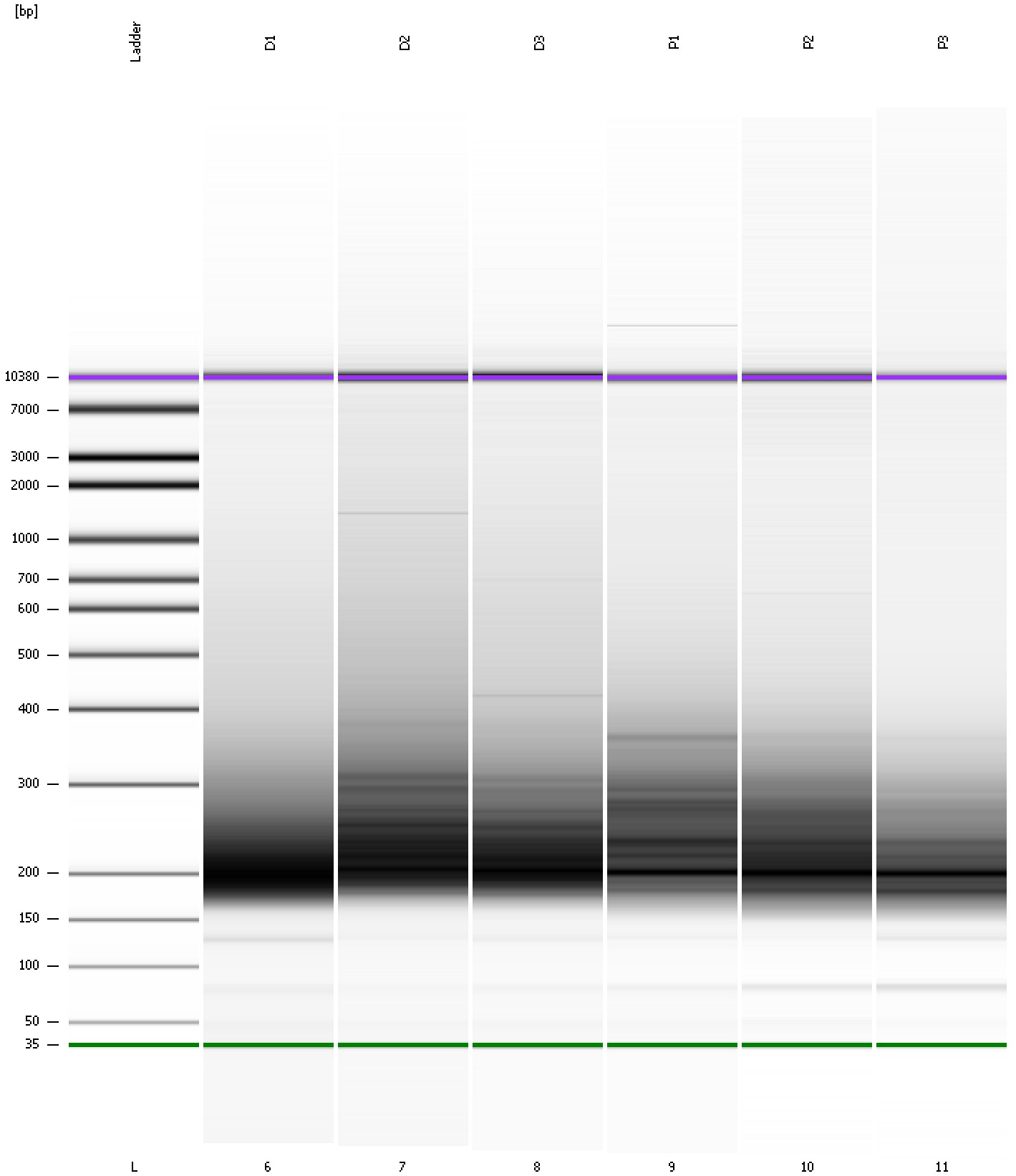
Region table for sample 11 : P3

| From [bp] | To [bp] | Average Size [bp] | Corr. Area | Molarity [pmol/l] | Co Conc. [pg/μl] | % of Total | Size distribution in CV [%] |
|-----------|---------|-------------------|------------|-------------------|------------------|------------|-----------------------------|
| 107 | 1,000 | 267 | 2,727.4 | 37,143.7 | 5,587.82 | 92 | 44.7 |

Assay Class: High Sensitivity DNA Assay
Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
Modified: 12/13/2016 10:59:54 AM

Gel Image



Assay Class: High Sensitivity DNA Assay
 Data Path: C:\...r\2100 expert\data\2016-12-13\2016-12-13_002_BBS_QC_D_P.xad

Created: 12/13/2016 9:59:28 AM
 Modified: 12/13/2016 10:59:54 AM

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 | | 12/13/2016 10:39:51 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Run started on port 1 (File: C:\Program Files\Agilent\2100 bioanalyzer\2100 expert\data\2016-12-13\2016-12-13_002.xad) | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Product Number : G2938B | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Name : | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Vendor : Agilent Technologies | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Serial# : DE13701086 | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Firmware : C.01.069 | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |
| Cartridge : Electrode | | Instrument | Run | | 12/13/2016 9:59:28 AM | (GMT --08:00) Pacific Standard Time | UC Davis | D8XSMGH1 |