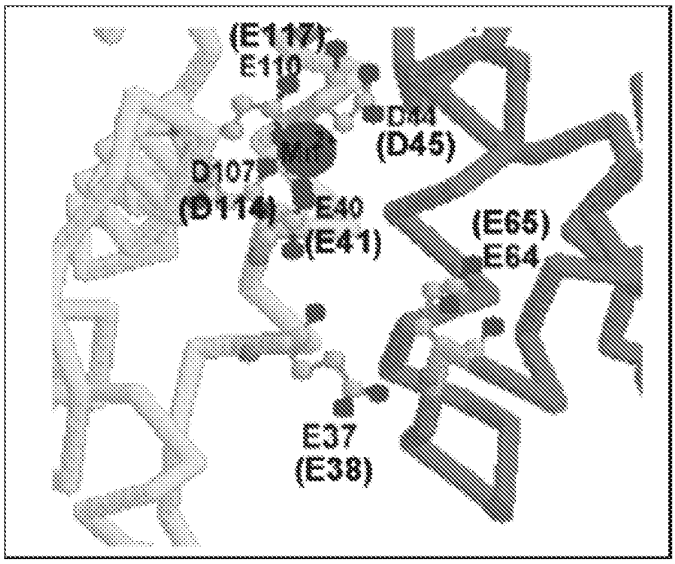


FIGURE 1A

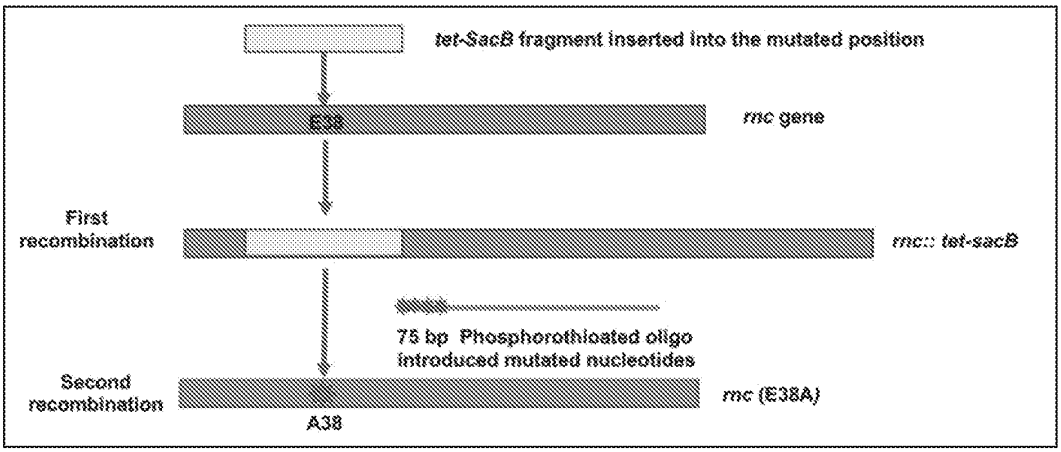


FIGURE 1B

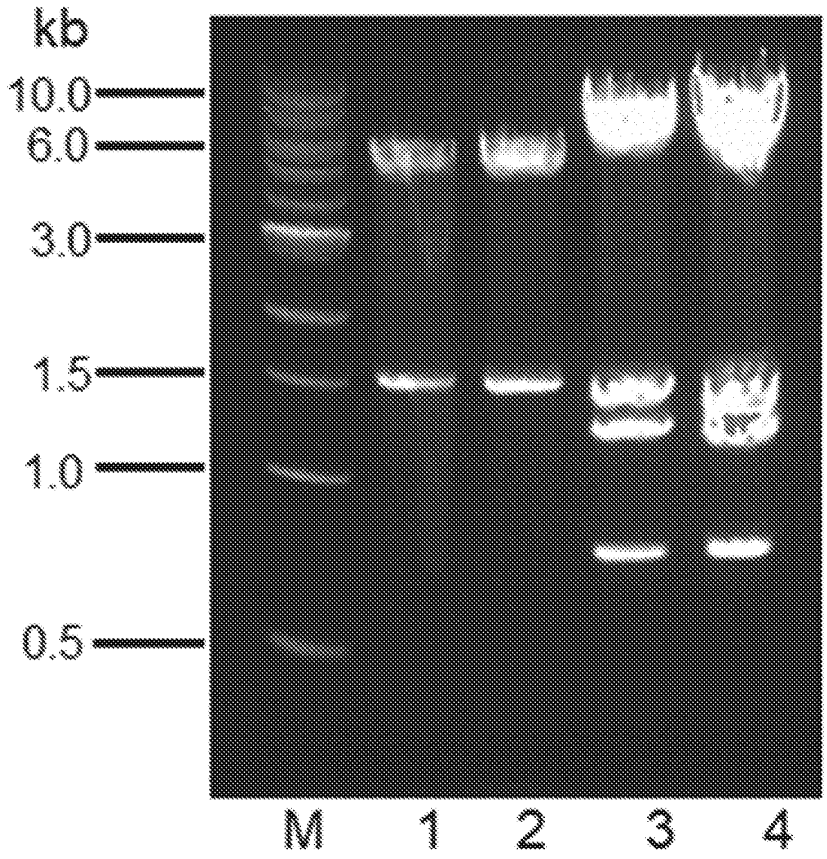


FIGURE 2

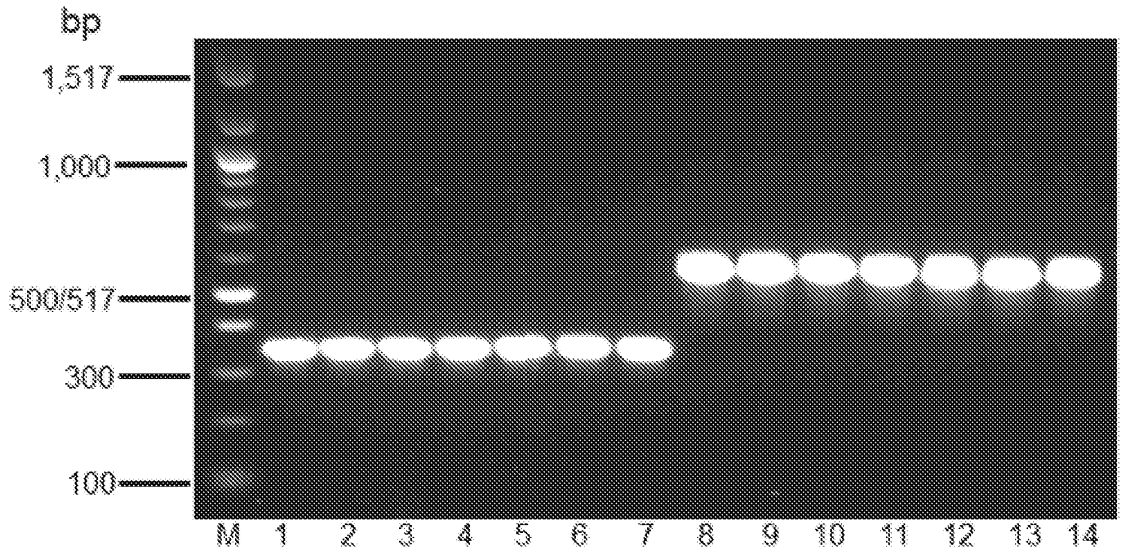


FIGURE 3

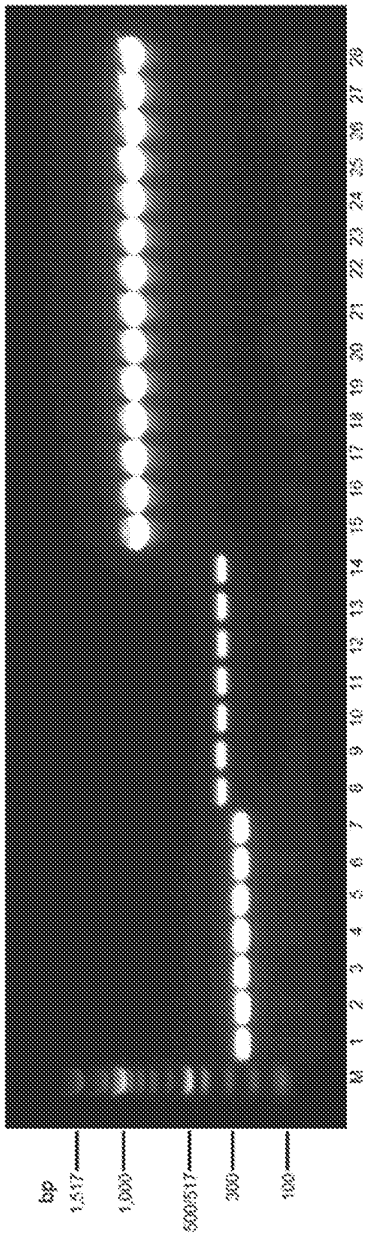


FIGURE 4

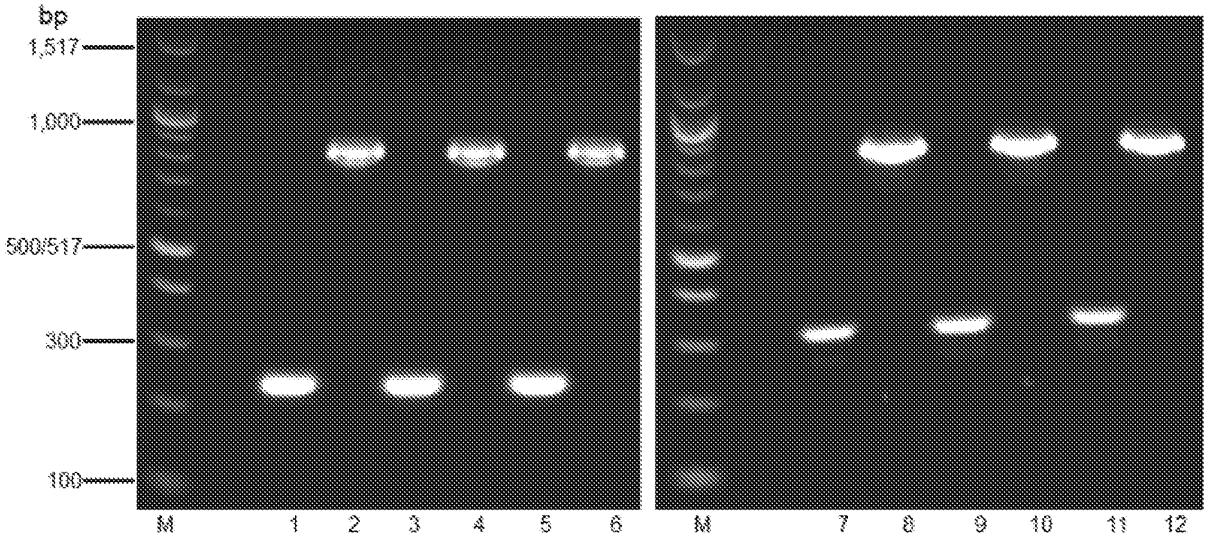


FIGURE 5

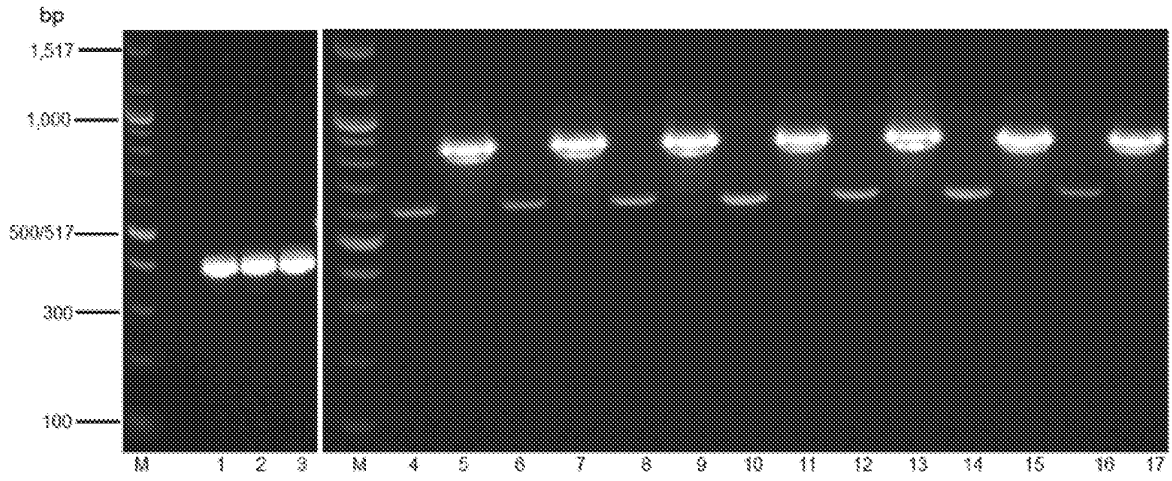


FIGURE 6

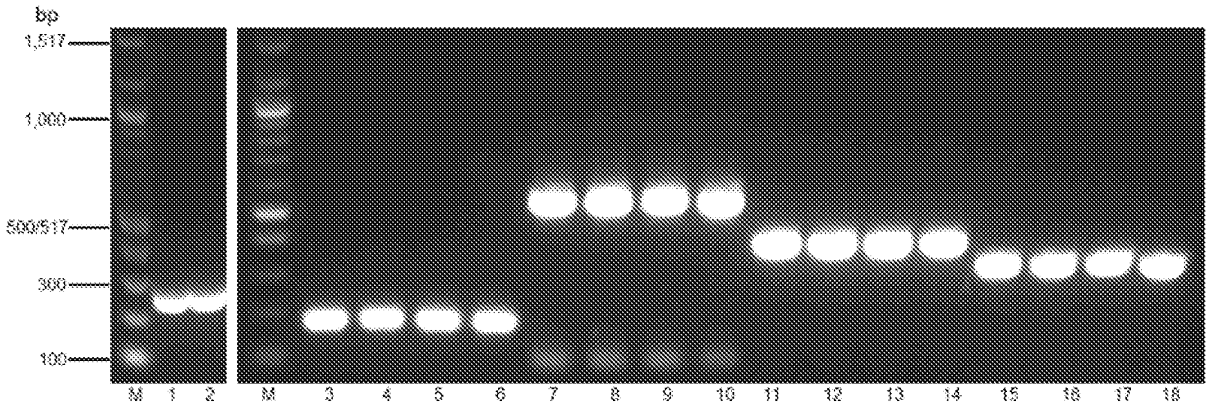

bp
1,517
1,000
500/517
300
100
M 1 2 M 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIGURE 7

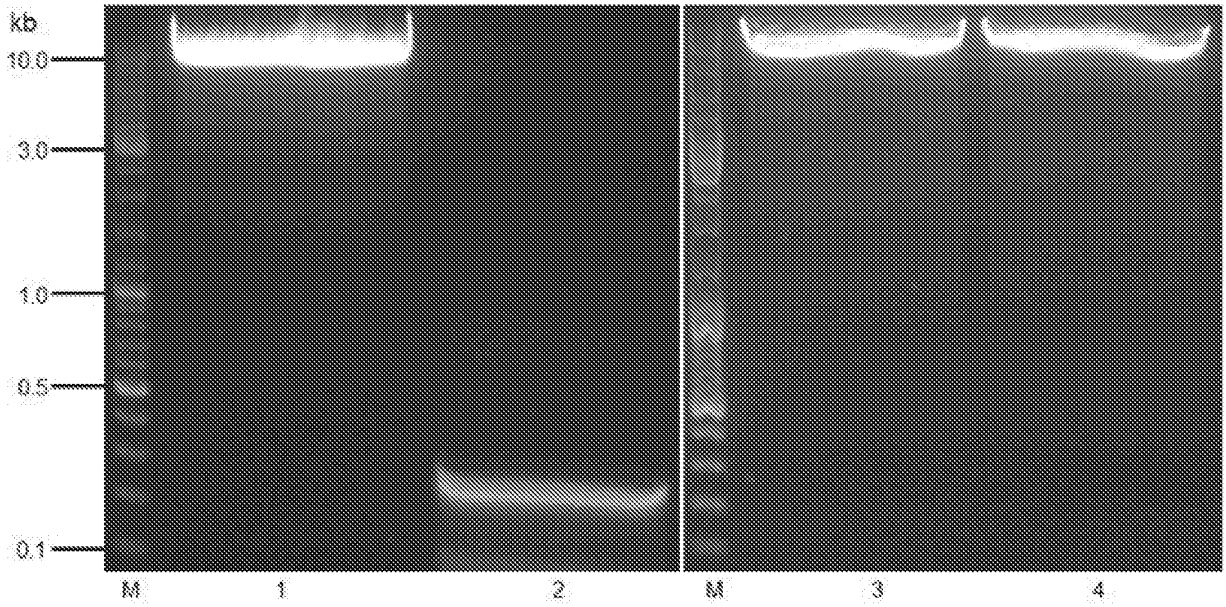


FIGURE 8

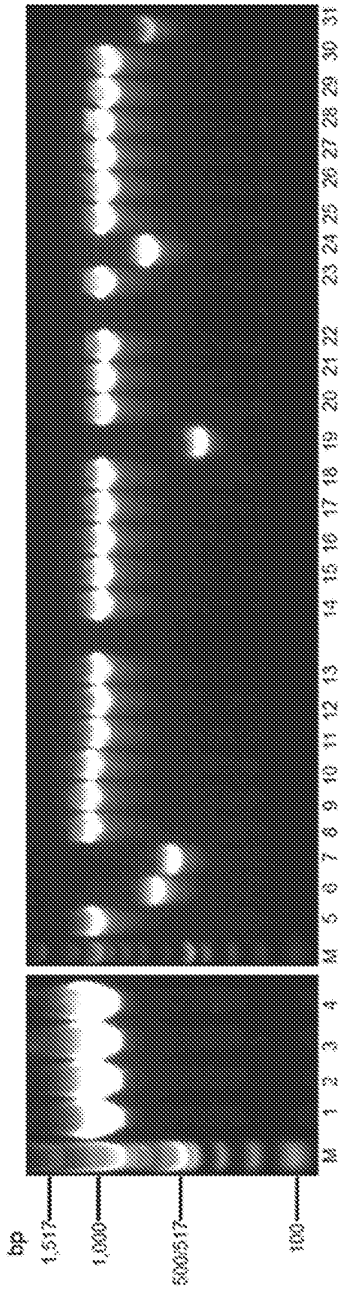

M 1 2 3 4
M 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
bp
1,517
1,000
506/517
100

FIGURE 9

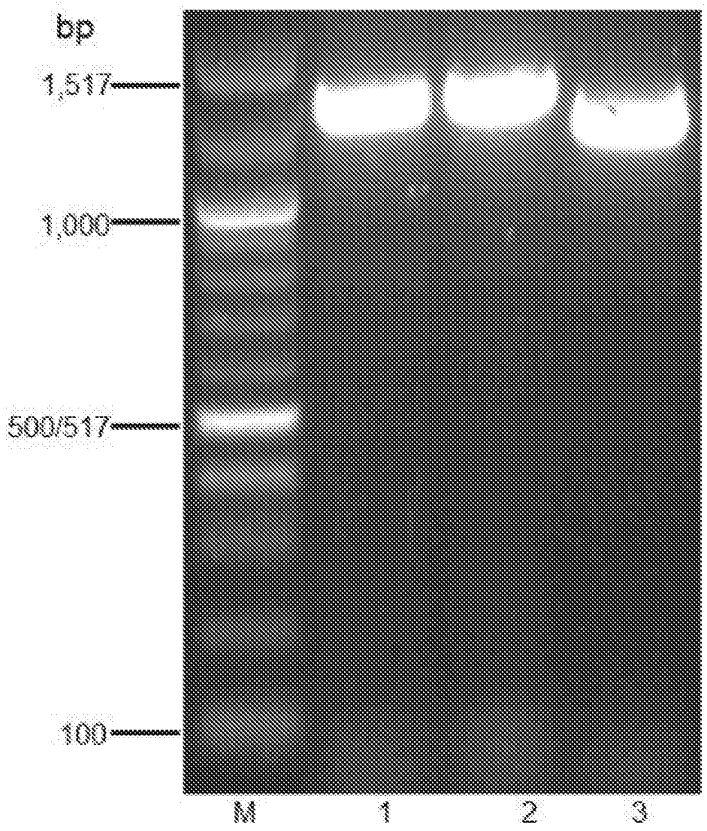


FIGURE 10

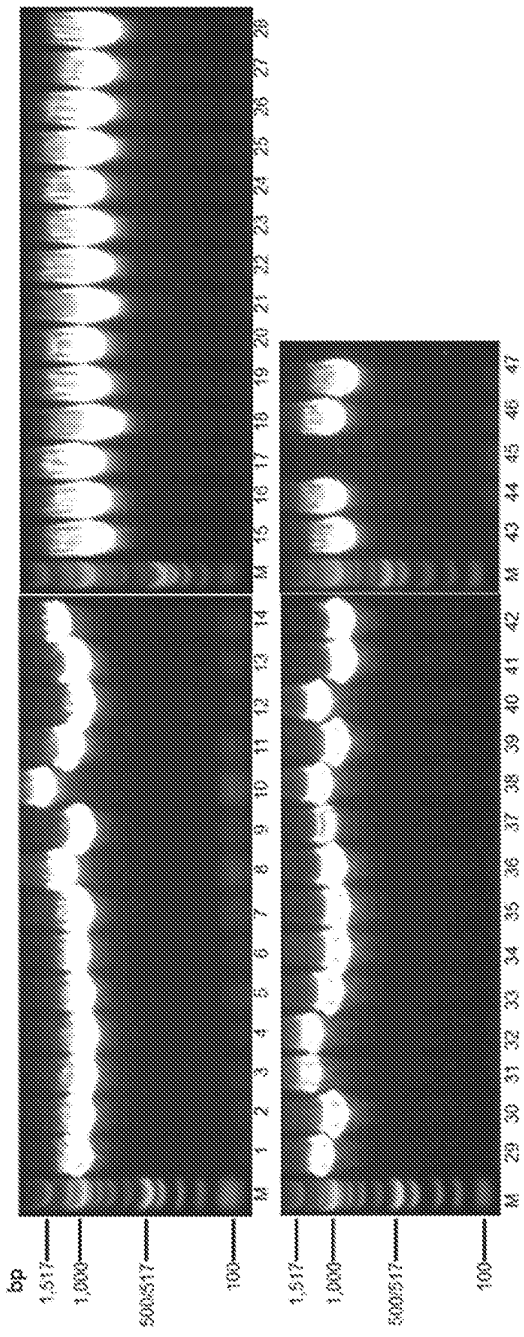

bp
1,517
1,000
500/517
100
M
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
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32
33
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40
41
42
43
44
45
46
47

FIGURE 11

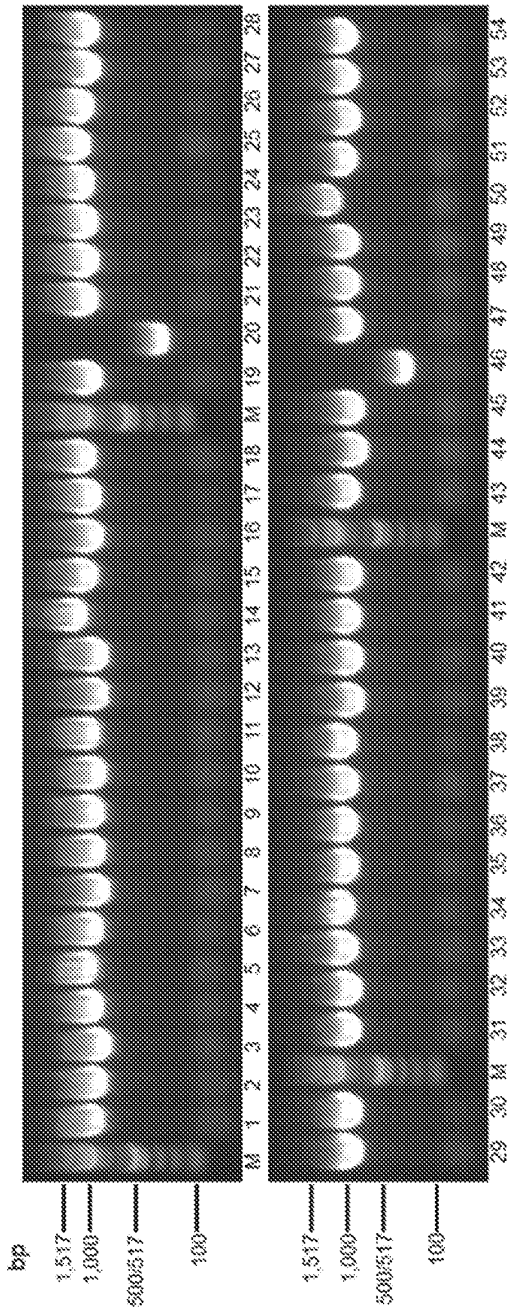

M 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 M 19 20 21 22 23 24 25 26 27 28
29 30 M 31 32 33 34 35 36 37 38 39 40 41 42 M 43 44 45 46 47 48 49 50 51 52 53 54
bp
1,517
1,000
500/517
100
1,517
1,000
500/517
100

FIGURE 12

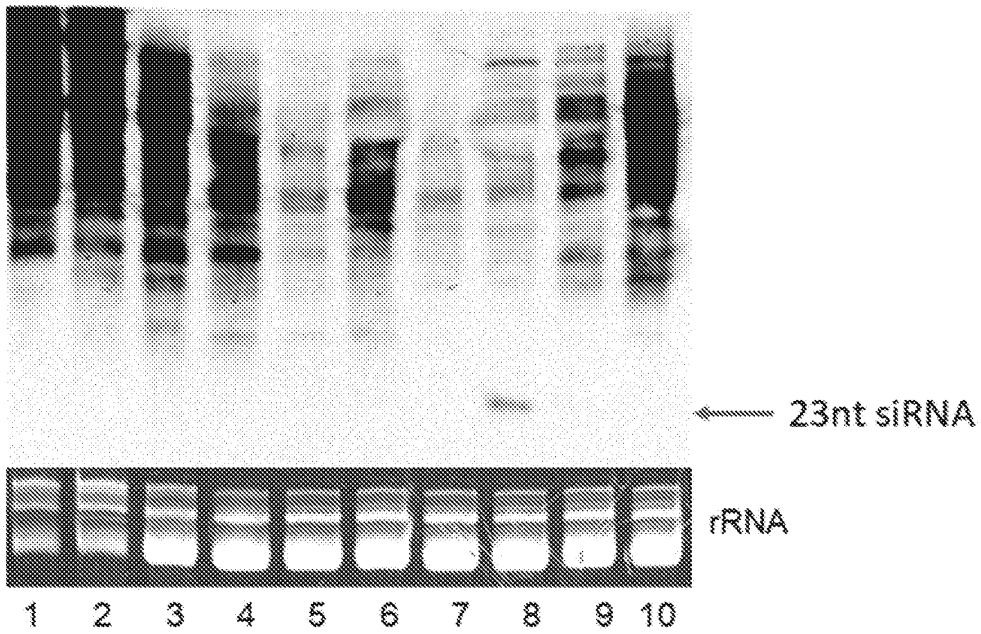


FIGURE 13

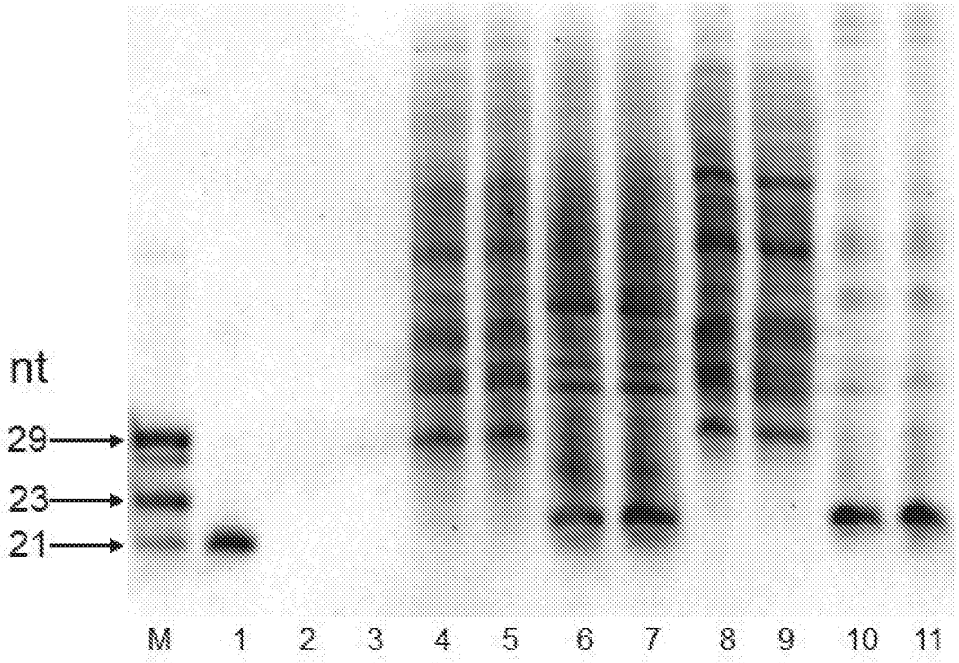


FIGURE 14

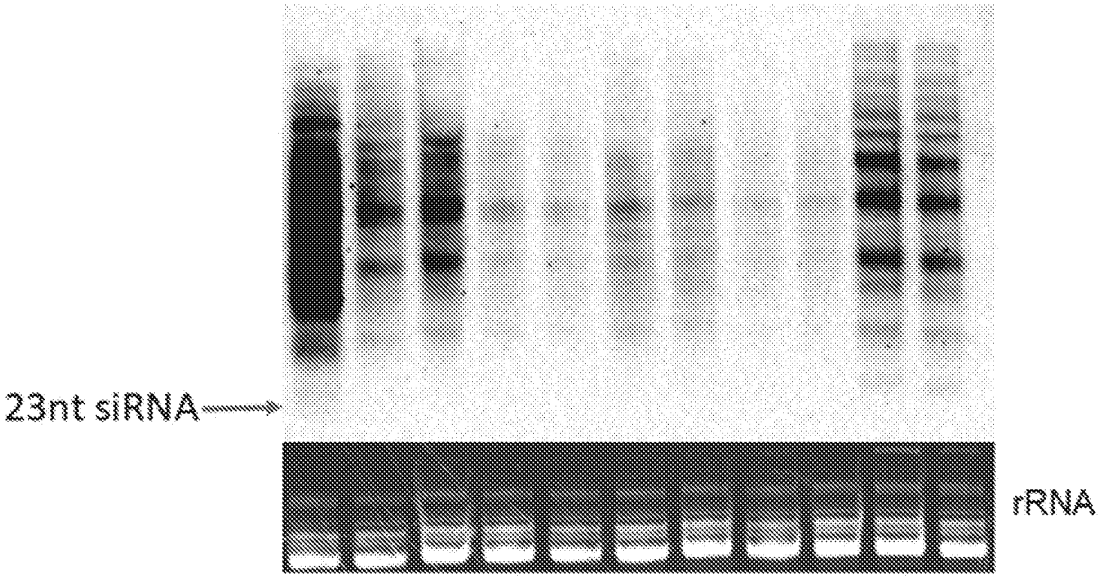


FIGURE 15

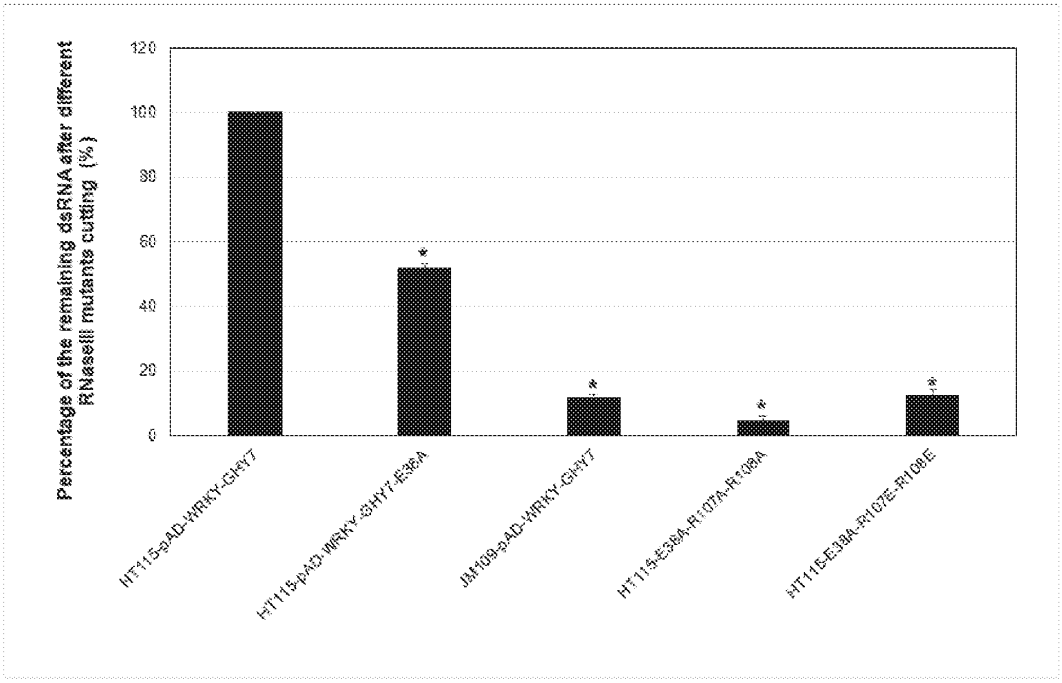

Percentage of the remaining dsRNA after different RNaseIII mutants cutting (%)
120
100
80
60
40
20
0
*
*
*
*
HT115-pAD-WRKY-GHY7
HT115-pAD-WRKY-GHY7-E38A
JM109-pAD-WRKY-GHY7
HT115-E38A-R107A-R108A
HT115-E38A-R107E-R108E

FIGURE 16

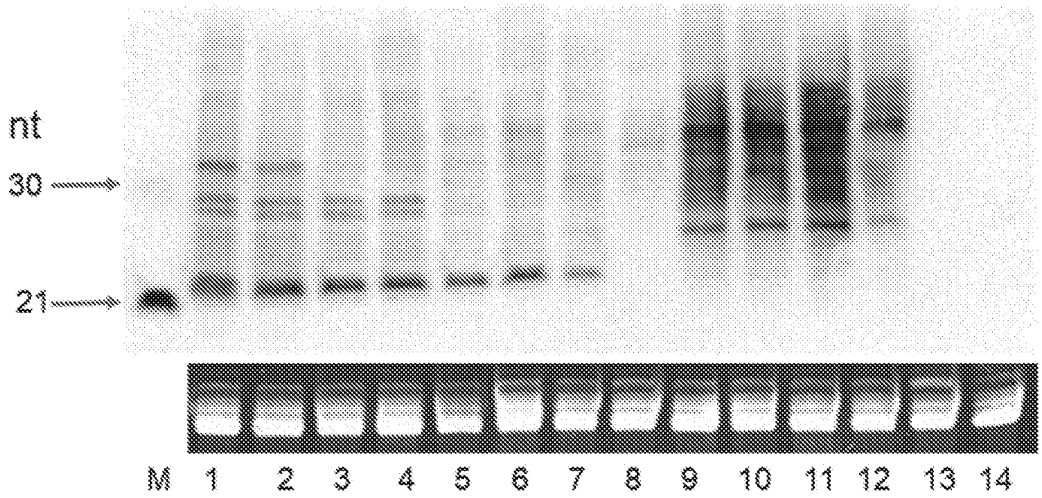


FIGURE 17

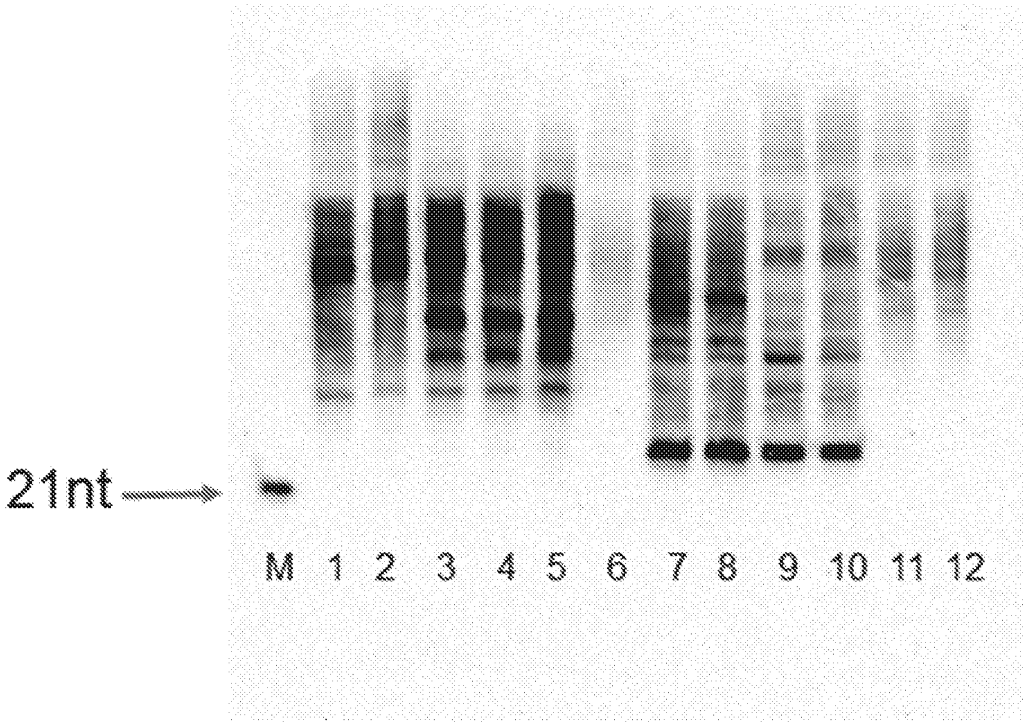


FIGURE 18

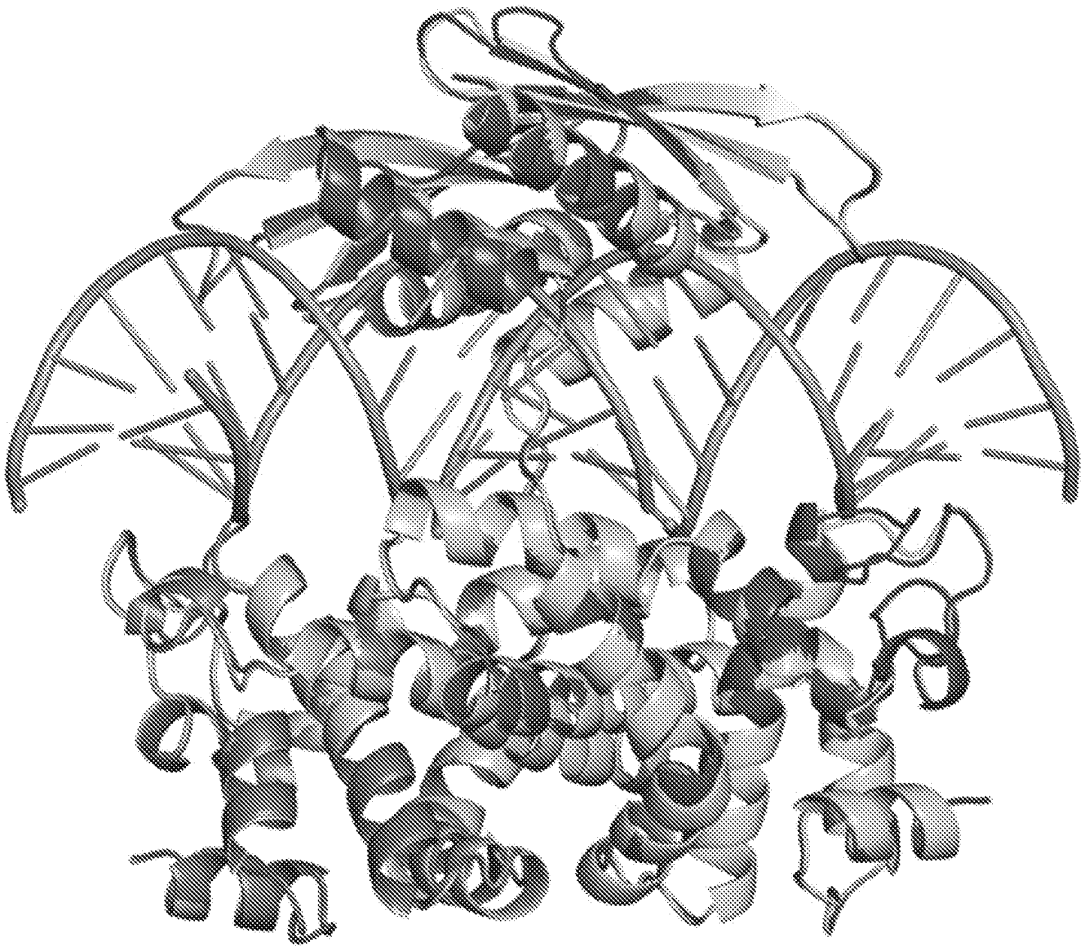


FIGURE 19

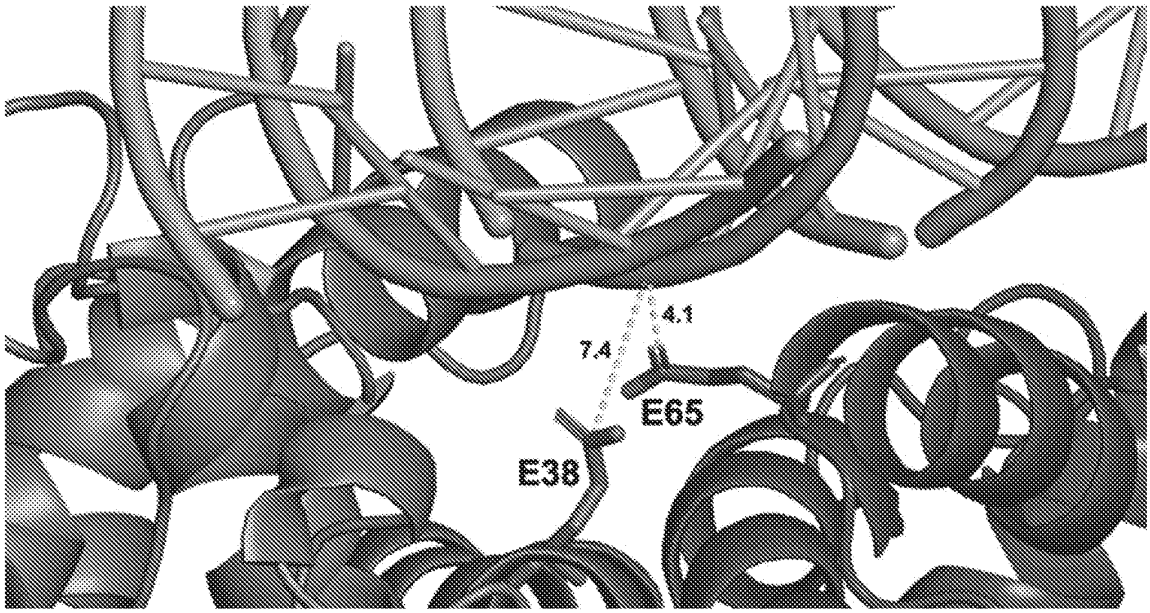
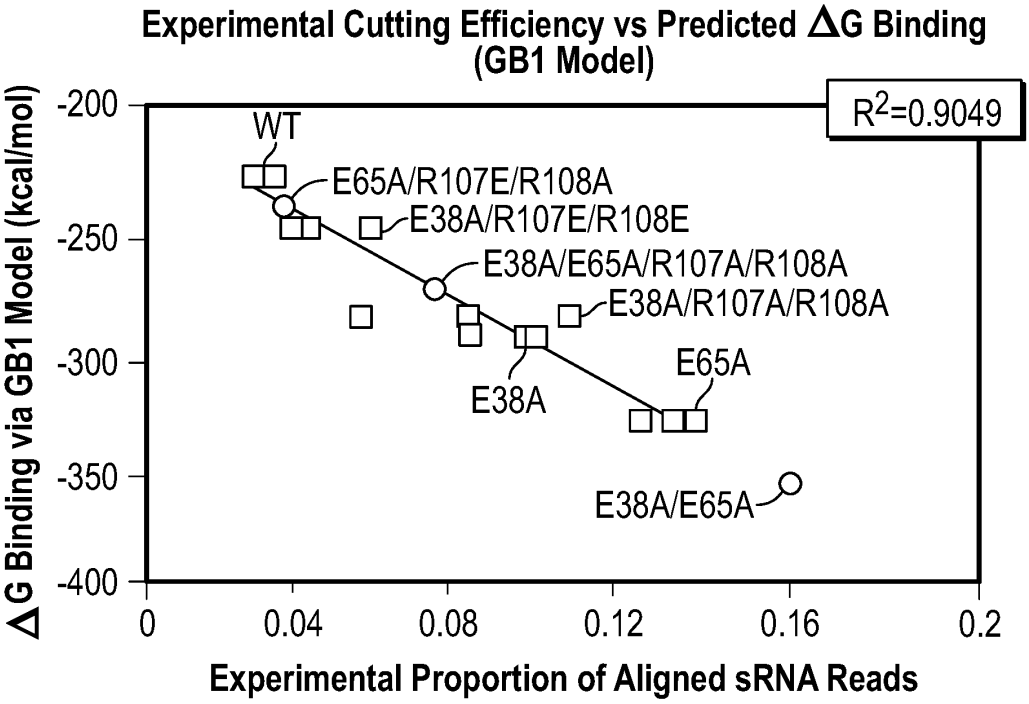


FIGURE 20


Experimental Cutting Efficiency vs Predicted ΔG Binding
(GB1 Model)
R2=0.9049
WT
E65A/R107E/R108A
E38A/R107E/R108E
E38A/E65A/R107A/R108A
E38A/R107A/R108A
E65A
E38A
E38A/E65A
ΔG Binding via GB1 Model (kcal/mol)
-200
-250
-300
-350
-400
0
0.04
0.08
0.12
0.16
0.2
Experimental Proportion of Aligned sRNA Reads

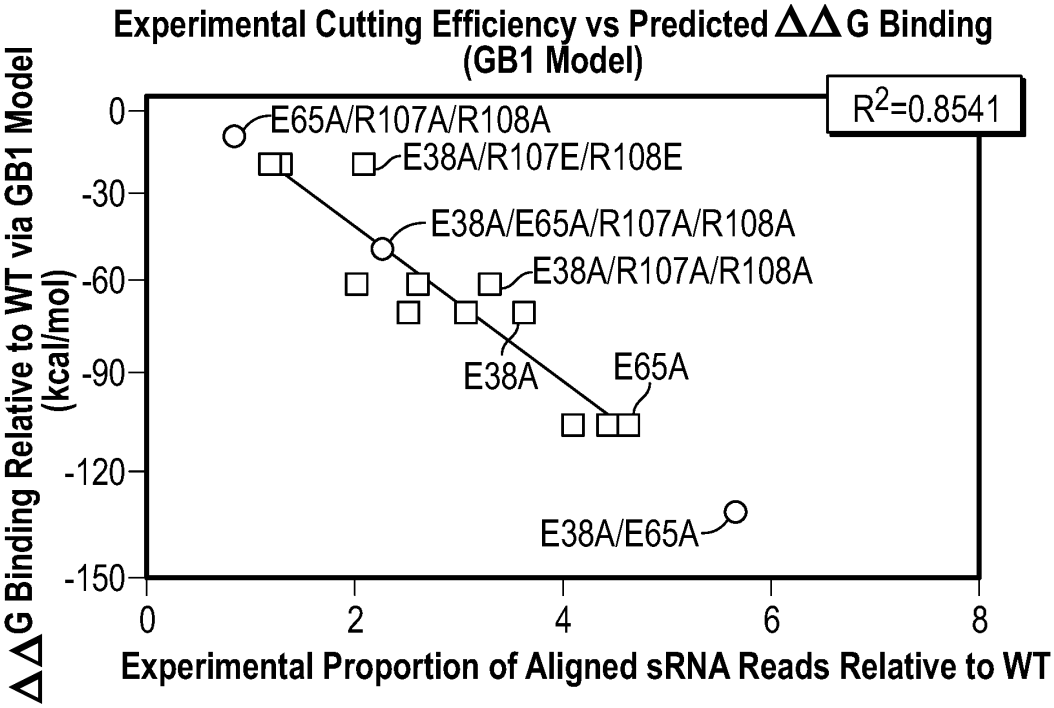

Experimental Cutting Efficiency vs Predicted ΔΔG Binding
(GB1 Model)
R2=0.8541
E65A/R107A/R108A
E38A/R107E/R108E
E38A/E65A/R107A/R108A
E38A/R107A/R108A
E38A
E65A
E38A/E65A
ΔΔG Binding Relative to WT via GB1 Model (kcal/mol)
0
-30
-60
-90
-120
-150
0
2
4
6
8
Experimental Proportion of Aligned sRNA Reads Relative to WT

FIG. 21

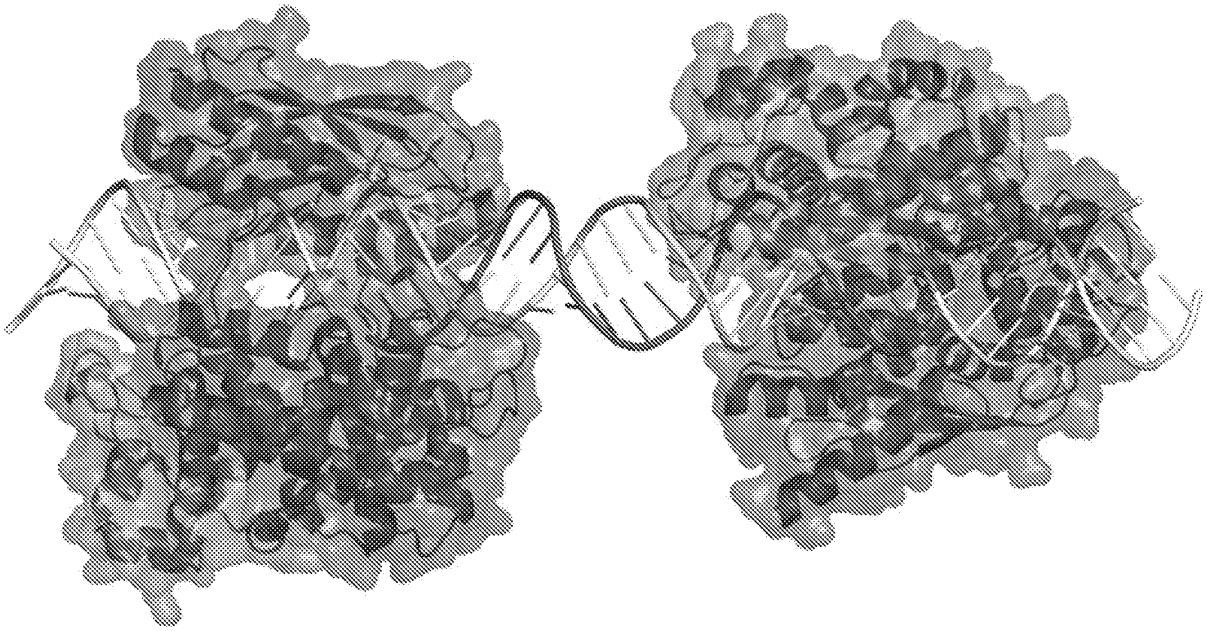


FIGURE 22

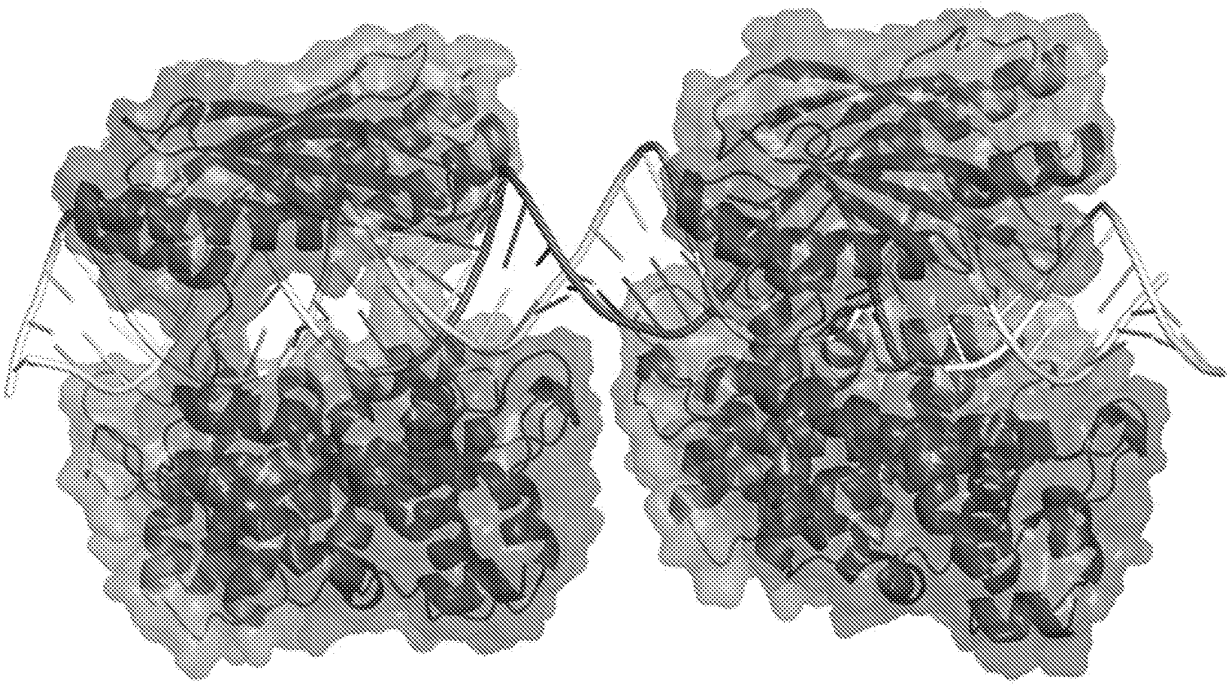


FIGURE 23

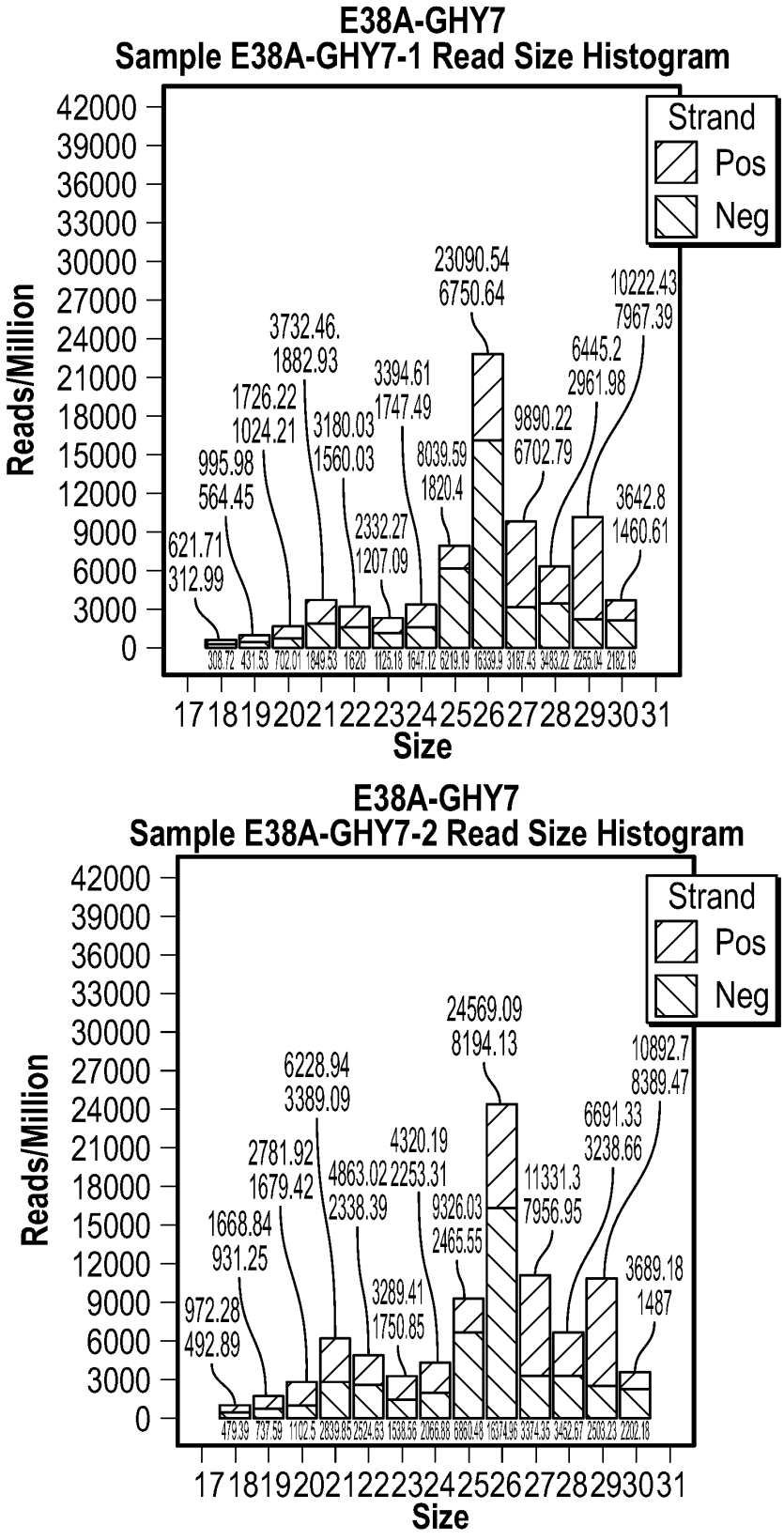
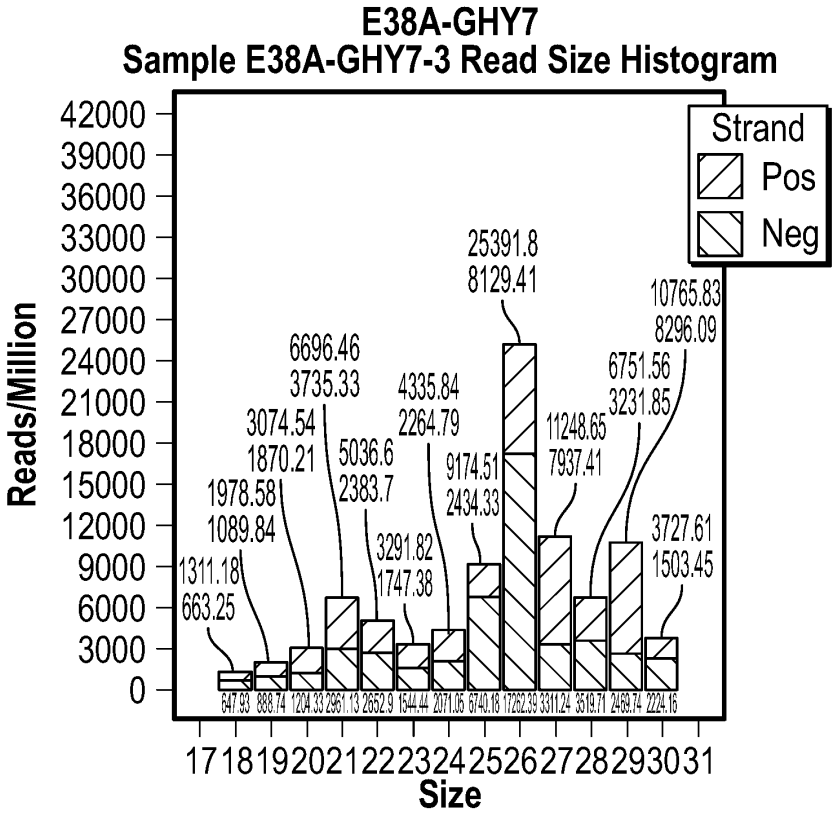

E38A-GHY7
Sample E38A-GHY7-1 Read Size Histogram
Strand
Pos
Neg
Reads/Million
Size
E38A-GHY7
Sample E38A-GHY7-2 Read Size Histogram
Strand
Pos
Neg
Reads/Million
Size

FIGURE 24A


E38A-GHY7
Sample E38A-GHY7-3 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
1311.18
663.25
1978.58
1089.84
3074.54
1870.21
6696.46
3735.33
5036.6
2383.7
3291.82
1747.38
4335.84
2264.79
9174.51
2434.33
25391.8
8129.41
11248.65
7937.41
6751.56
3231.85
10765.83
8296.09
3727.61
1503.45
647.33 888.74 1204.33 2861.13 2652.9 1544.44 2071.05 6740.18 17262.39 3311.24 3519.71 2468.74 2224.16

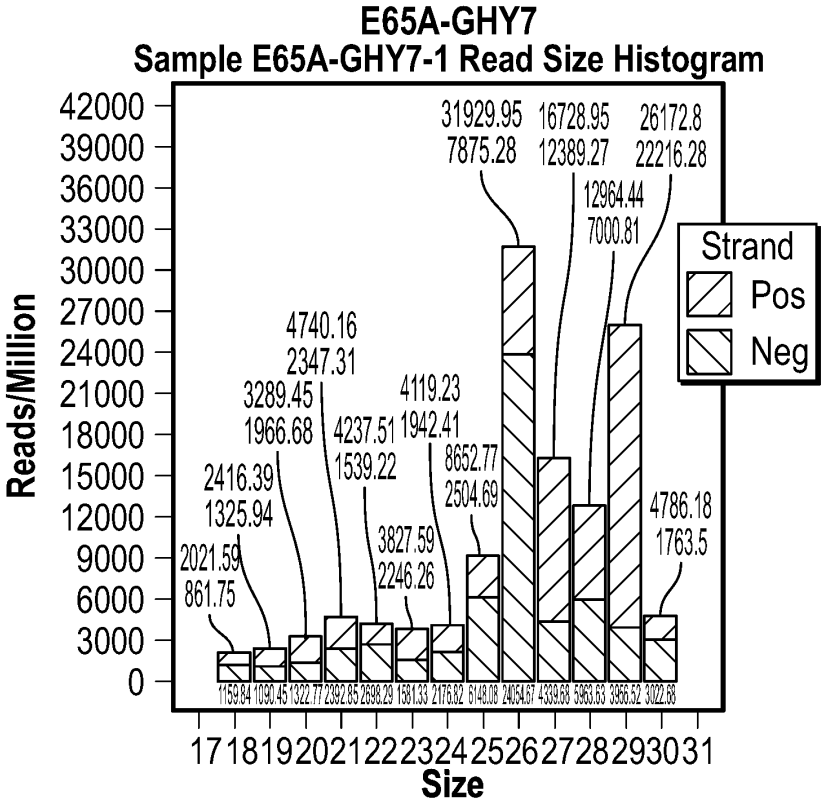

E65A-GHY7
Sample E65A-GHY7-1 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
2021.59
861.75
2416.39
1325.94
3289.45
1966.68
4740.16
2347.31
4237.51
1539.22
3827.59
2246.26
4119.23
1942.41
8652.77
2504.69
31929.95
7875.28
16728.95
12389.27
12964.44
7000.81
26172.8
22216.28
4786.18
1763.5
1159.84 1090.45 1322.77 2392.85 2698.29 1581.33 2176.82 6148.08 24054.67 4339.68 3963.63 3956.52 3022.68

FIGURE 24A

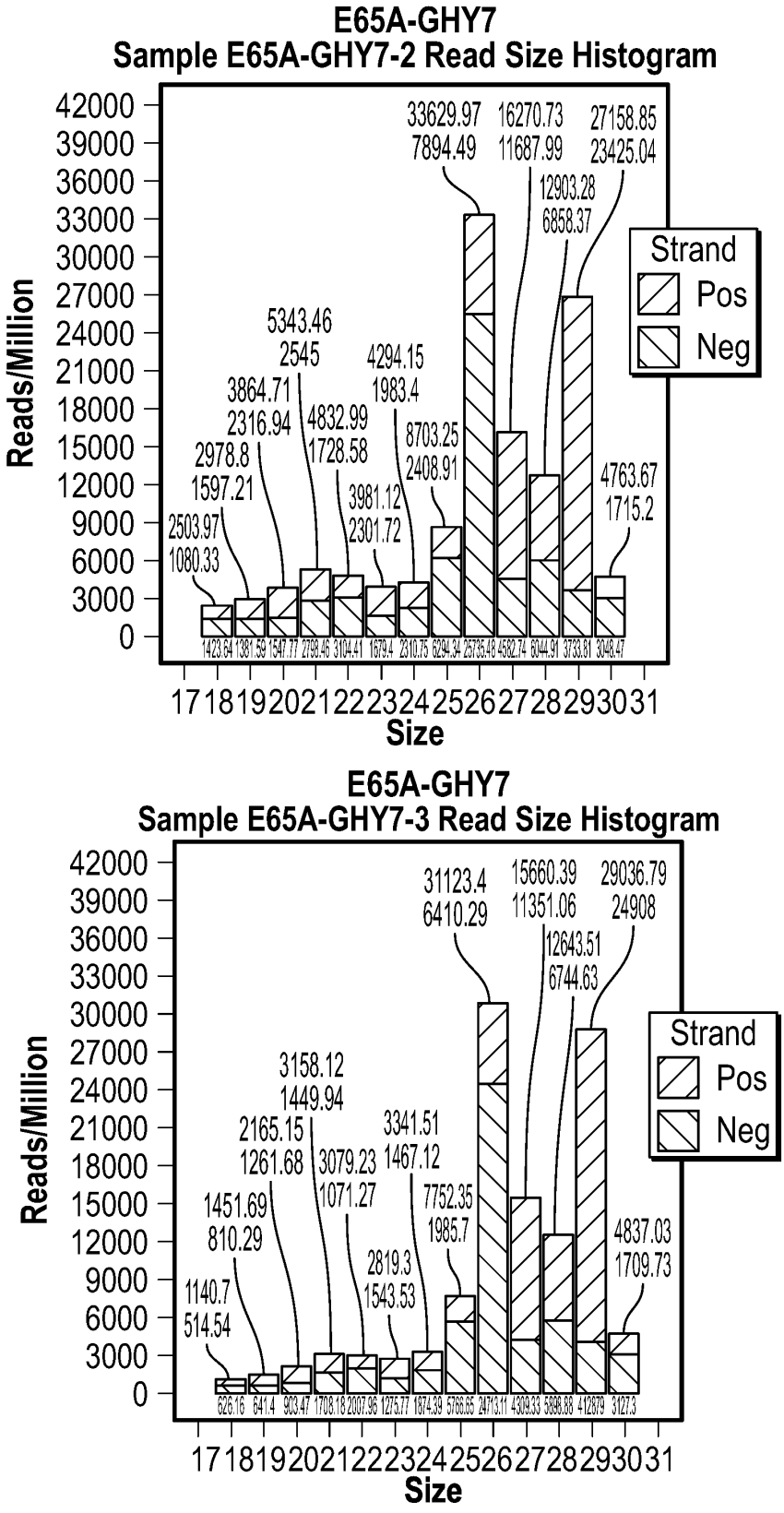

E65A-GHY7
Sample E65A-GHY7-2 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
33629.97
7894.49
16270.73
11687.99
27158.85
23425.04
12903.28
6858.37
5343.46
2545
4294.15
1983.4
3864.71
2316.94
4832.99
1728.58
8703.25
2408.91
2978.8
1597.21
3981.12
2301.72
4763.67
1715.2
2503.97
1080.33
E65A-GHY7
Sample E65A-GHY7-3 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
31123.4
6410.29
15660.39
11351.06
29036.79
24908
12643.51
6744.63
3158.12
1449.94
2165.15
1261.68
3341.51
1467.12
3079.23
1071.27
7752.35
1985.7
1451.69
810.29
4837.03
1709.73
2819.3
1543.53
1140.7
514.54

FIGURE 24A

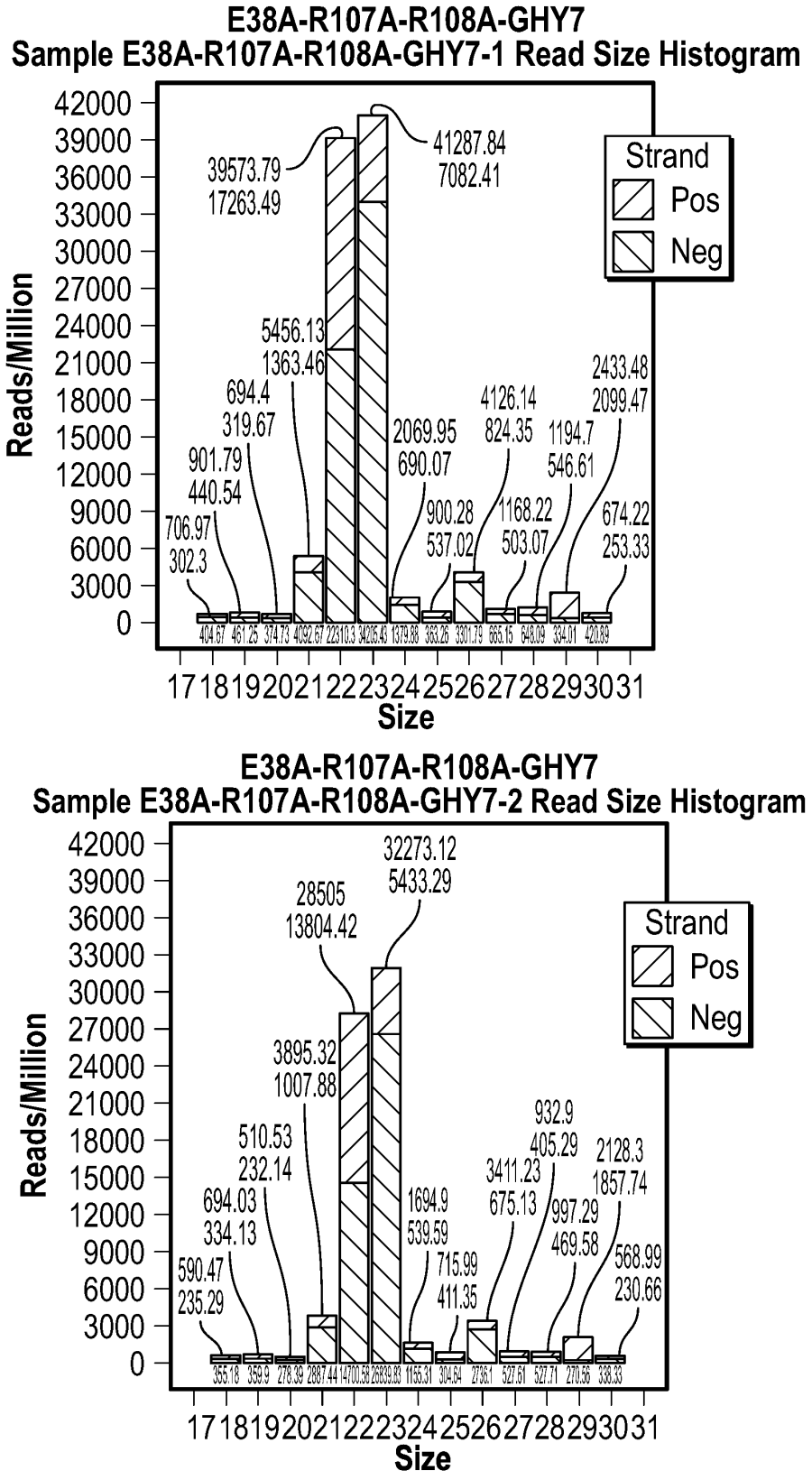

E38A-R107A-R108A-GHY7
Sample E38A-R107A-R108A-GHY7-1 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
39573.79
17263.49
41287.84
7082.41
5456.13
1363.46
694.4
319.67
901.79
440.54
706.97
302.3
2069.95
690.07
900.28
537.02
4126.14
824.35
1168.22
503.07
1194.7
546.61
2433.48
2099.47
674.22
253.33
E38A-R107A-R108A-GHY7
Sample E38A-R107A-R108A-GHY7-2 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
32273.12
5433.29
28505
13804.42
3895.32
1007.88
510.53
232.14
694.03
334.13
590.47
235.29
1694.9
539.59
715.99
411.35
3411.23
675.13
932.9
405.29
997.29
469.58
2128.3
1857.74
568.99
230.66

FIGURE 24A

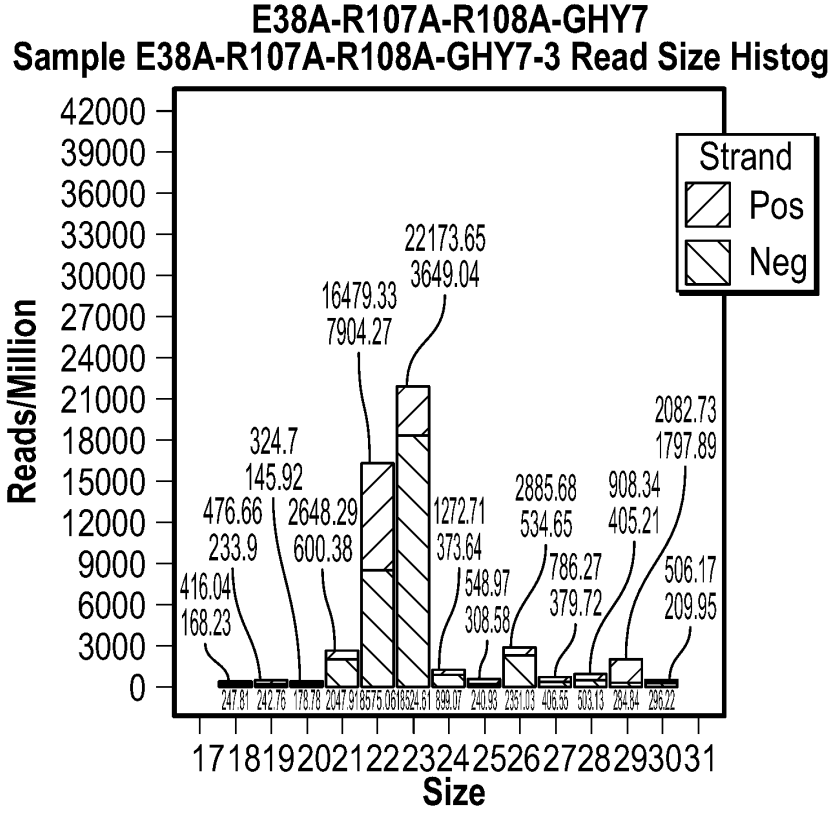

E38A-R107A-R108A-GHY7
Sample E38A-R107A-R108A-GHY7-3 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
1718192021222324252627282930 31
22173.65
3649.04
16479.33
7904.27
324.7
145.92
476.66
233.9
416.04
168.23
2648.29
600.38
1272.71
373.64
548.97
308.58
2885.68
534.65
786.27
379.72
908.34
405.21
2082.73
1797.89
506.17
209.95
247.81
242.76
178.78
2047.91
8575.06
18524.61
899.07
240.93
2351.03
406.55
503.13
294.84
286.22

FIGURE 24A

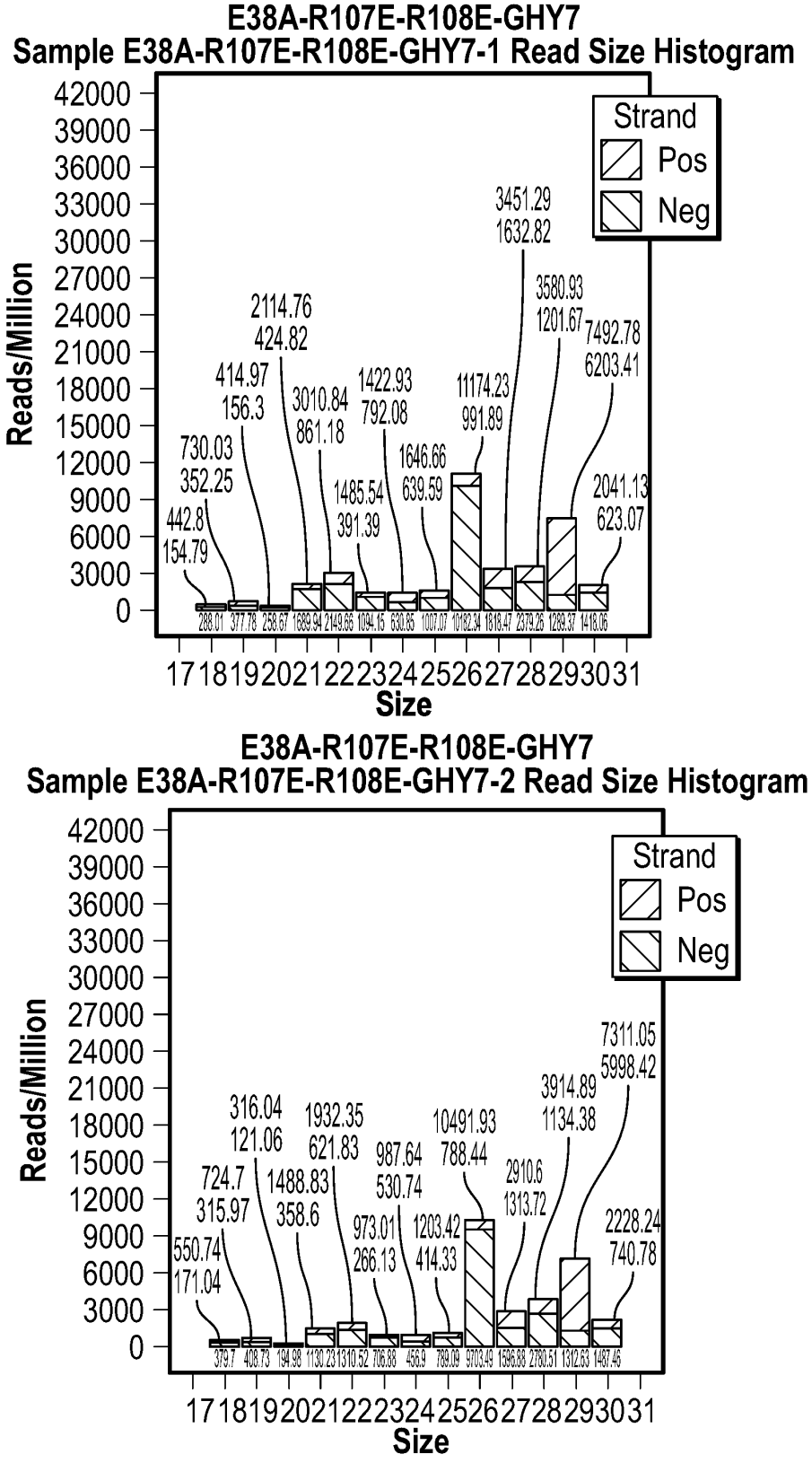
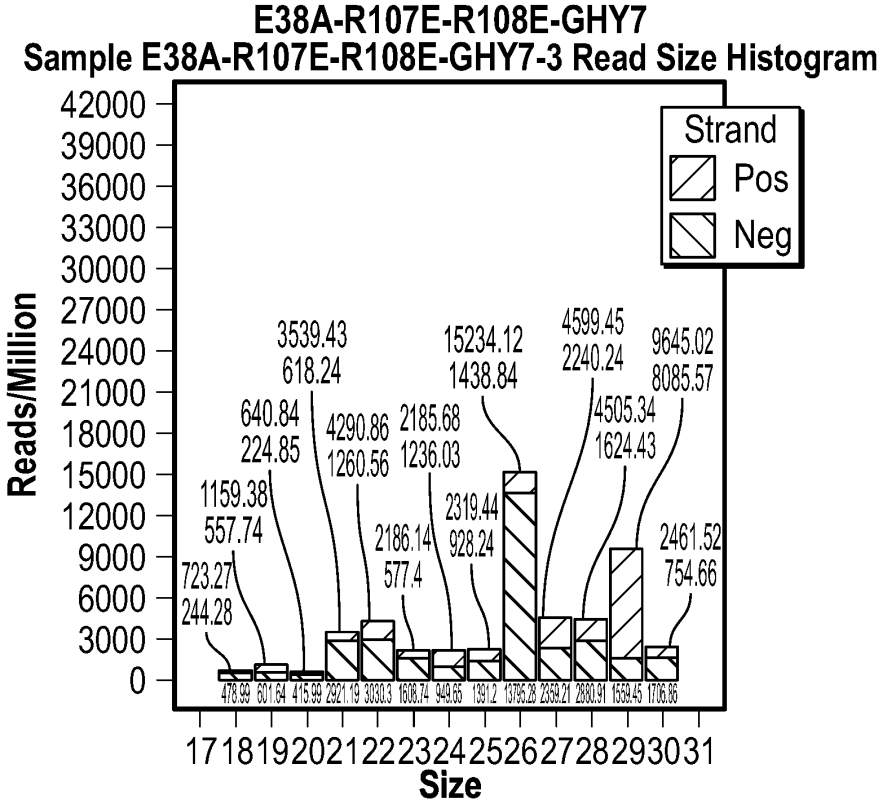

E38A-R107E-R108E-GHY7
Sample E38A-R107E-R108E-GHY7-1 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
E38A-R107E-R108E-GHY7
Sample E38A-R107E-R108E-GHY7-2 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg

FIGURE 24B


E38A-R107E-R108E-GHY7
Sample E38A-R107E-R108E-GHY7-3 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
723.27
244.28
1159.38
557.74
640.84
224.85
3539.43
618.24
4290.86
1260.56
2186.14
577.4
2185.68
1236.03
15234.12
1438.84
2319.44
928.24
4599.45
2240.24
4505.34
1624.43
9645.02
8085.57
2461.52
754.66

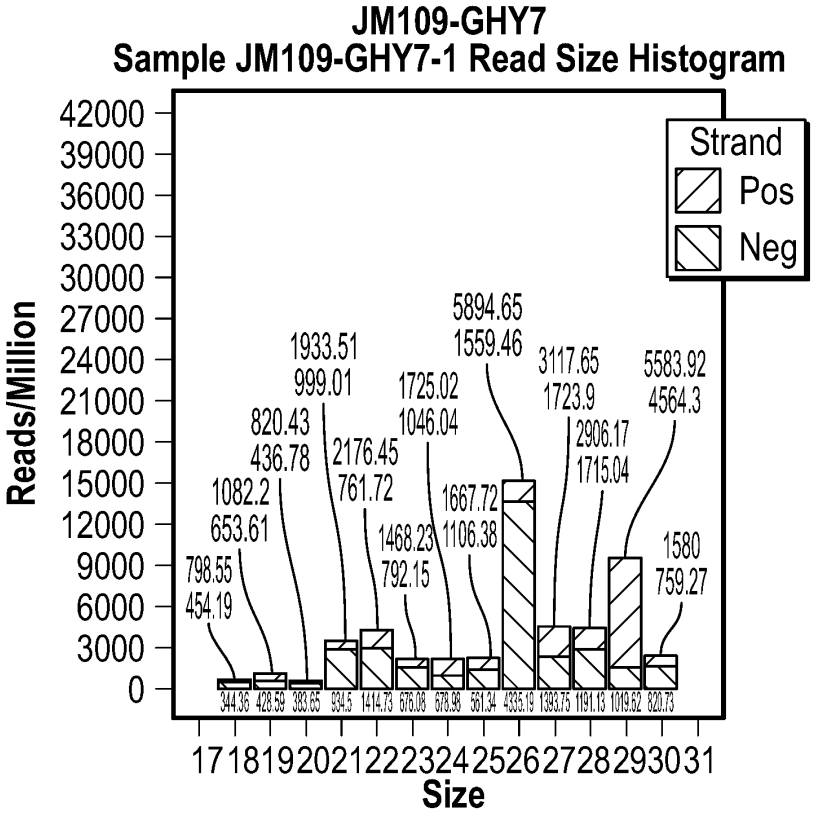

JM109-GHY7
Sample JM109-GHY7-1 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
798.55
454.19
1082.2
653.61
820.43
436.78
1933.51
999.01
2176.45
761.72
1468.23
792.15
1725.02
1046.04
5894.65
1559.46
1667.72
1106.38
3117.65
1723.9
2906.17
1715.04
5583.92
4564.3
1580
759.27

FIGURE 24B

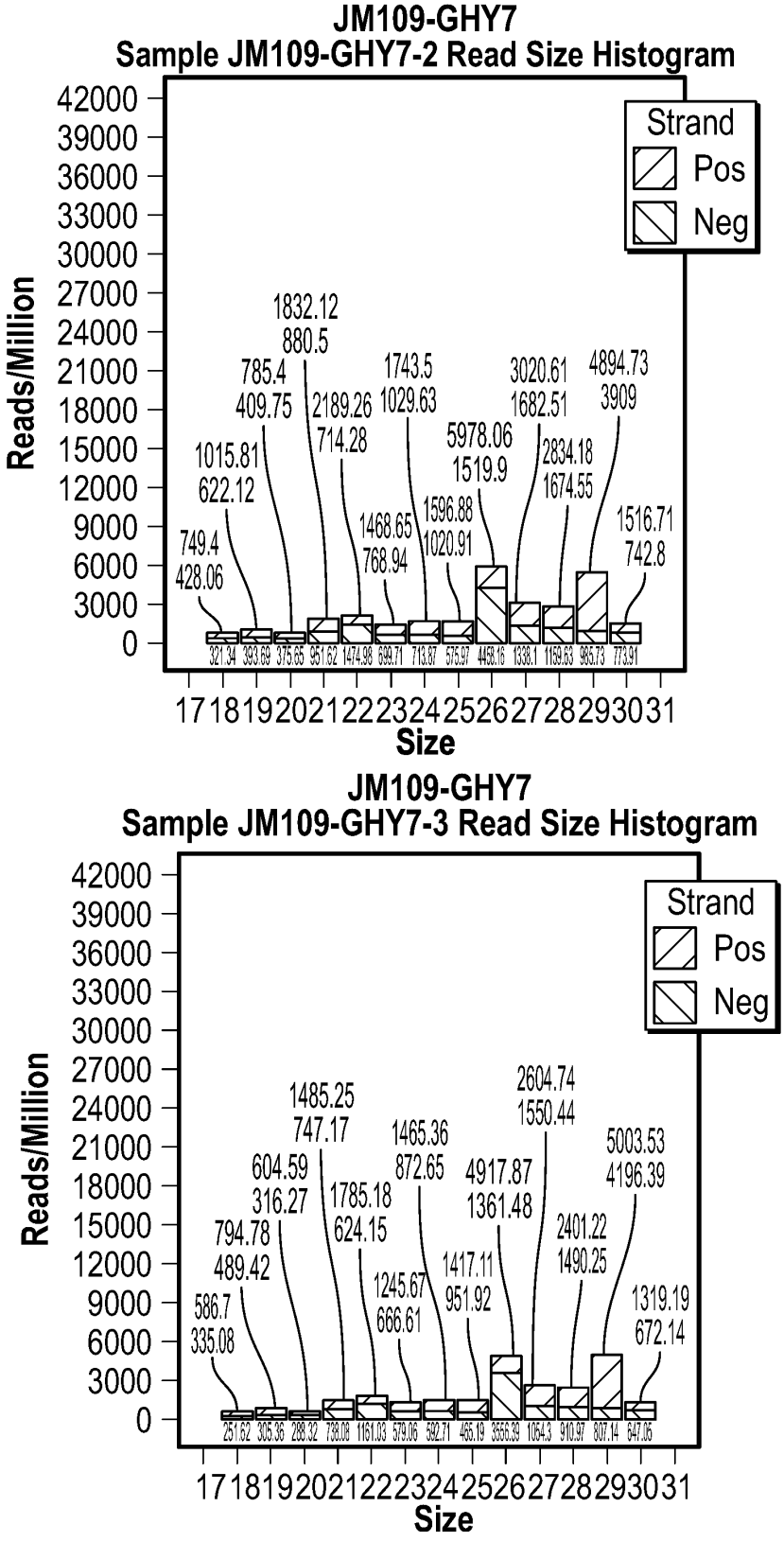

JM109-GHY7
Sample JM109-GHY7-2 Read Size Histogram
Strand
Pos
Neg
Reads/Million
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
1832.12
880.5
785.4
409.75
1743.5
1029.63
2189.26
714.28
3020.61
1682.51
4894.73
3909
5978.06
1519.9
1015.81
622.12
2834.18
1674.55
1596.88
1020.91
1468.65
768.94
1516.71
742.8
749.4
428.06
321.34 393.69 375.65 951.62 1474.98 699.71 713.87 575.97 4458.16 1338.1 1159.63 965.73 773.91
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Size
JM109-GHY7
Sample JM109-GHY7-3 Read Size Histogram
Strand
Pos
Neg
Reads/Million
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
1485.25
747.17
2604.74
1550.44
1465.36
872.65
5003.53
4196.39
604.59
316.27
4917.87
1361.48
1785.18
624.15
794.78
489.42
2401.22
1490.25
1417.11
951.92
1245.67
666.61
1319.19
672.14
586.7
335.08
251.62 305.36 288.32 738.08 1161.03 579.06 582.71 466.19 3556.39 1054.3 910.97 807.14 647.06
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Size

FIGURE 24B

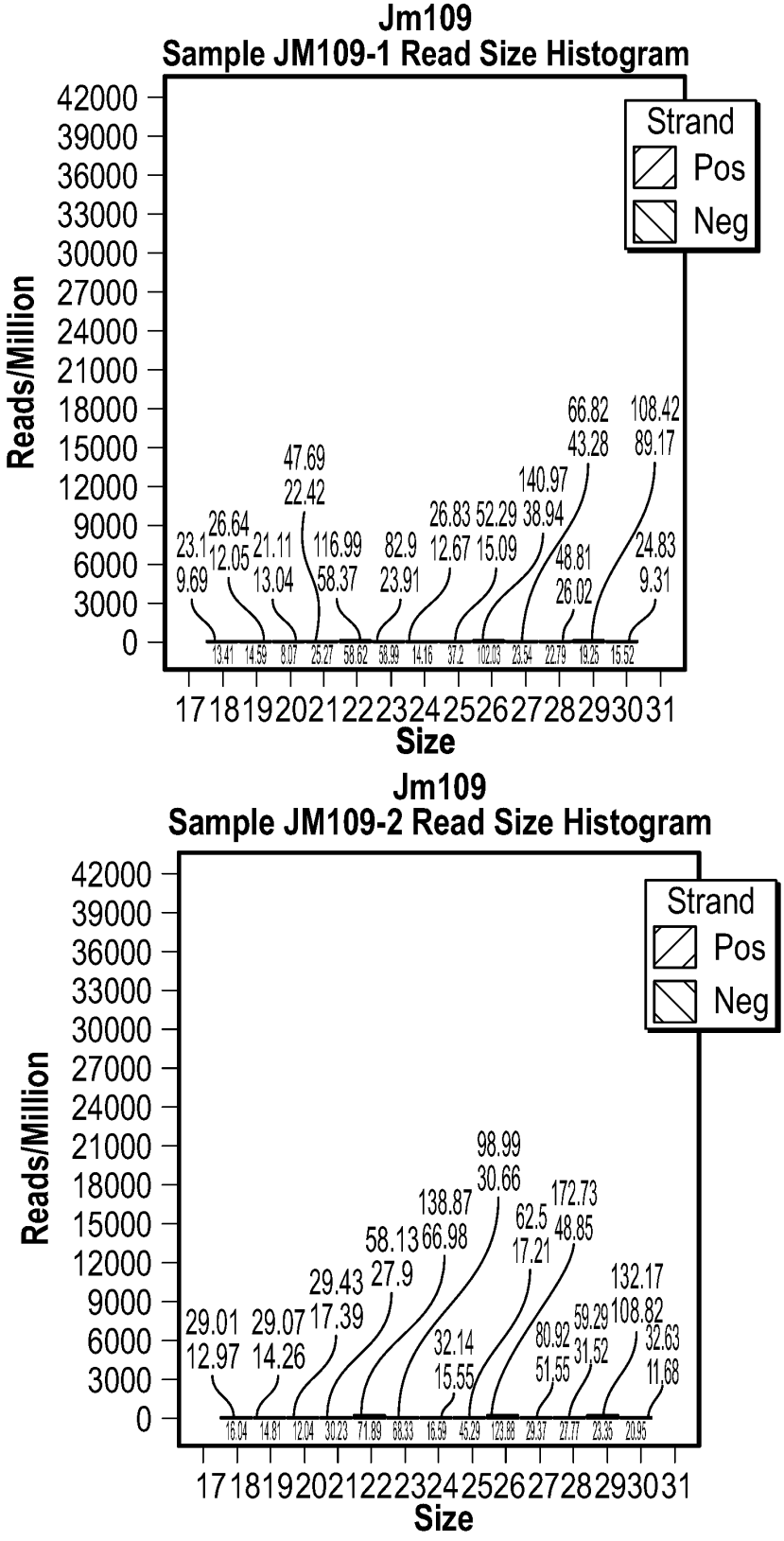

Jm109
Sample JM109-1 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg
Jm109
Sample JM109-2 Read Size Histogram
Reads/Million
Size
Strand
Pos
Neg

FIGURE 24B

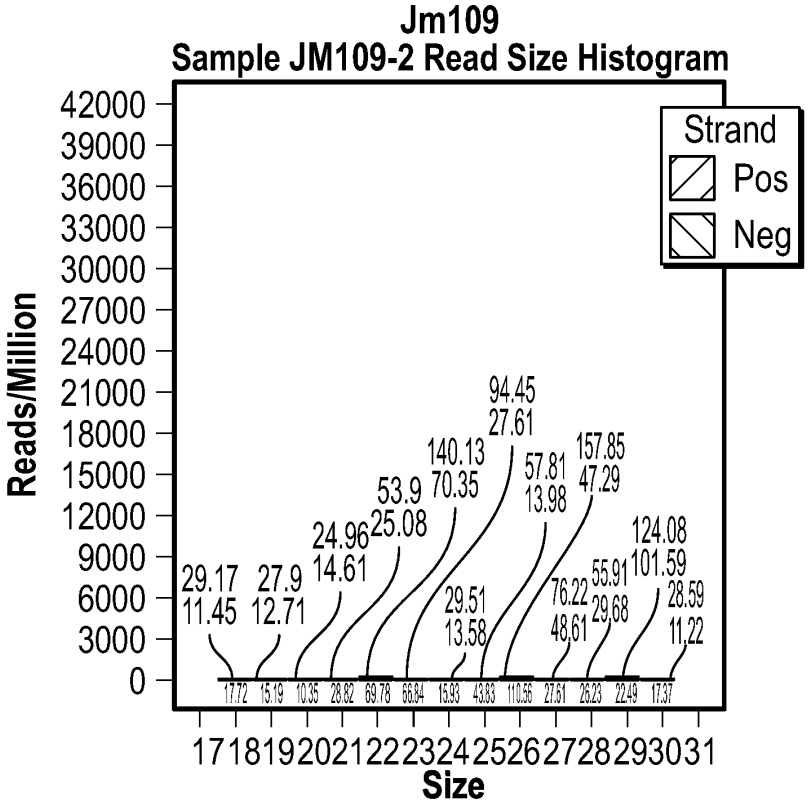

Jm109
Sample JM109-2 Read Size Histogram
Strand
Pos
Neg
Reads/Million
42000
39000
36000
33000
30000
27000
24000
21000
18000
15000
12000
9000
6000
3000
0
29.17
11.45
27.9
12.71
24.96
14.61
53.9
25.08
140.13
70.35
94.45
27.61
29.51
13.58
57.81
13.98
157.85
47.29
76.22
48.61
55.91
29.68
124.08
101.59
28.59
11.22
17.72
15.19
10.35
28.82
69.78
66.84
15.93
43.83
110.56
27.61
26.23
22.49
17.37
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Size

FIGURE 24B

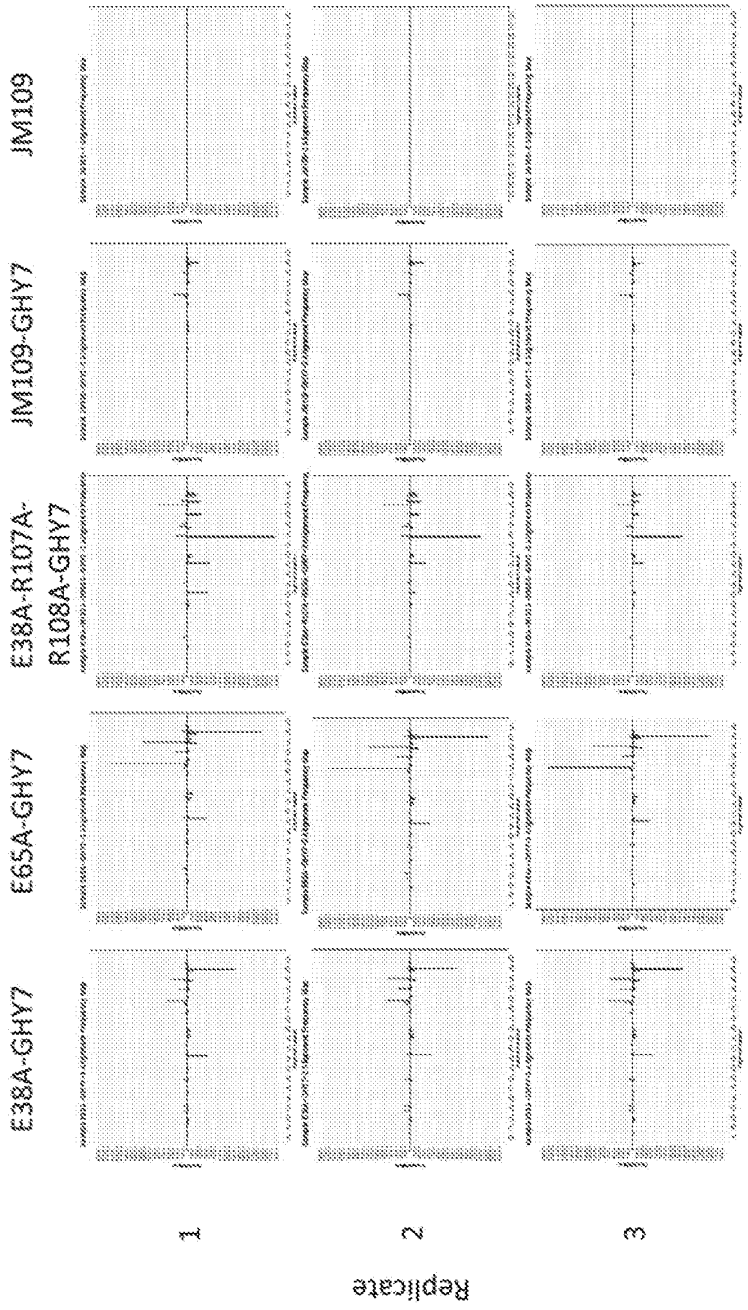

E38A-GHY7
E65A-GHY7
E38A-R107A-R108A-GHY7
JM109-GHY7
JM109
1
2
3
Replicate

FIGURE 25

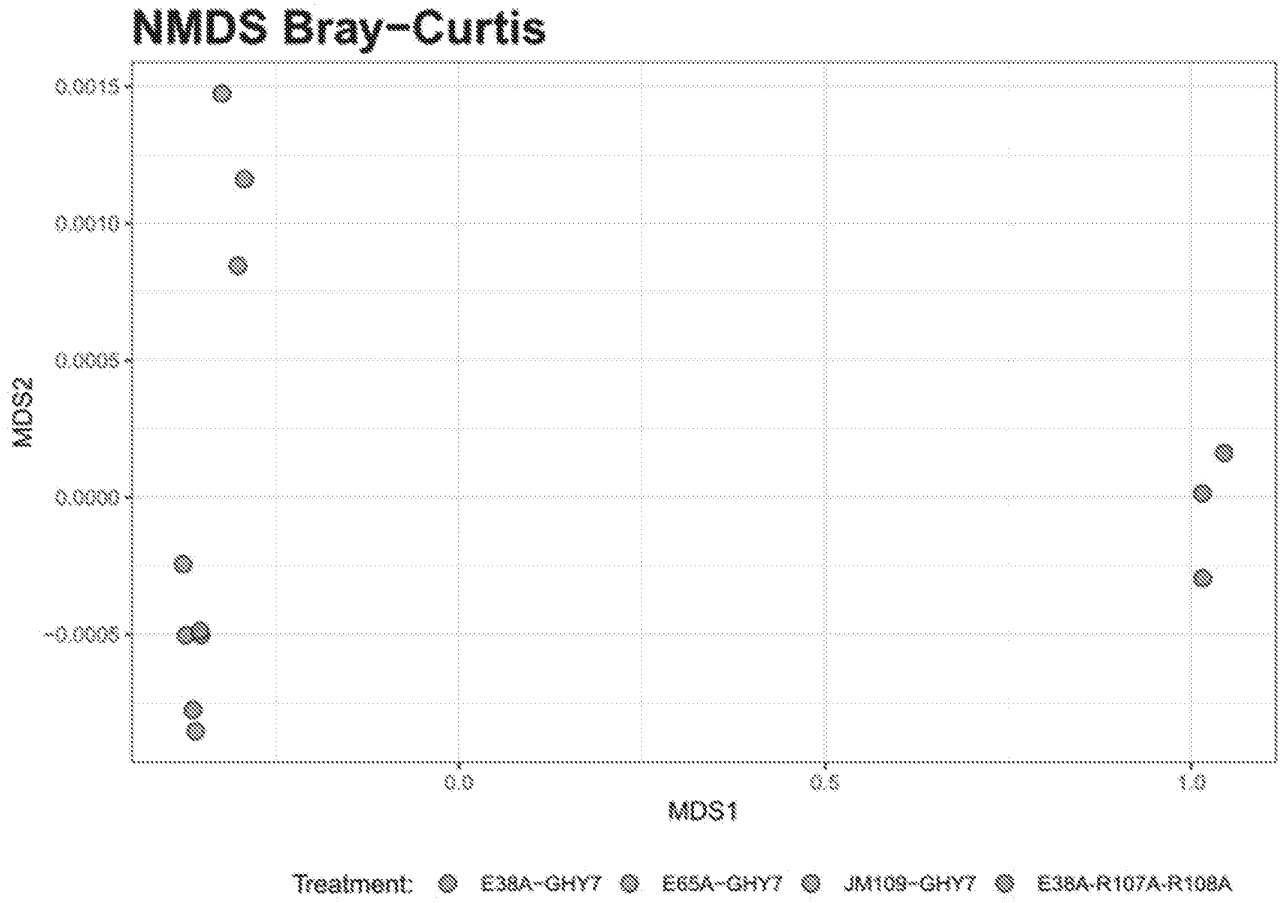

NMDS Bray-Curtis
0.0015
0.0010
0.0005
0.0000
-0.0005
MDS2
0.0
0.5
1.0
MDS1
Treatment:
E38A-GHY7
E65A-GHY7
JM109-GHY7
E38A-R107A-R108A

FIGURE 26

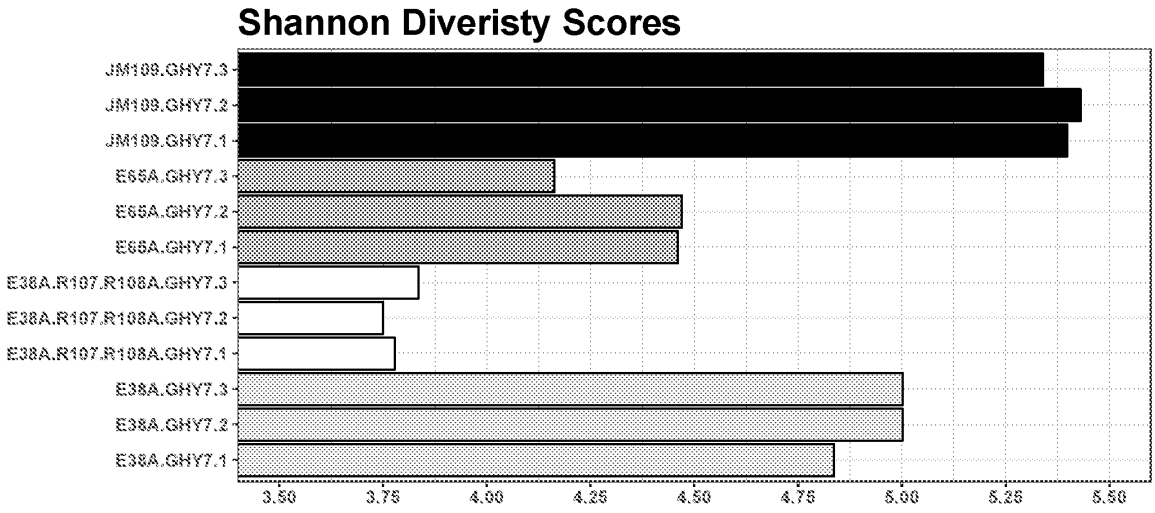

Shannon Diveristy Scores
JM109.GHY7.3
JM109.GHY7.2
JM109.GHY7.1
E65A.GHY7.3
E65A.GHY7.2
E65A.GHY7.1
E38A.R107.R108A.GHY7.3
E38A.R107.R108A.GHY7.2
E38A.R107.R108A.GHY7.1
E38A.GHY7.3
E38A.GHY7.2
E38A.GHY7.1
3.50
3.75
4.00
4.25
4.50
4.75
5.00
5.25
5.50

FIGURE 27

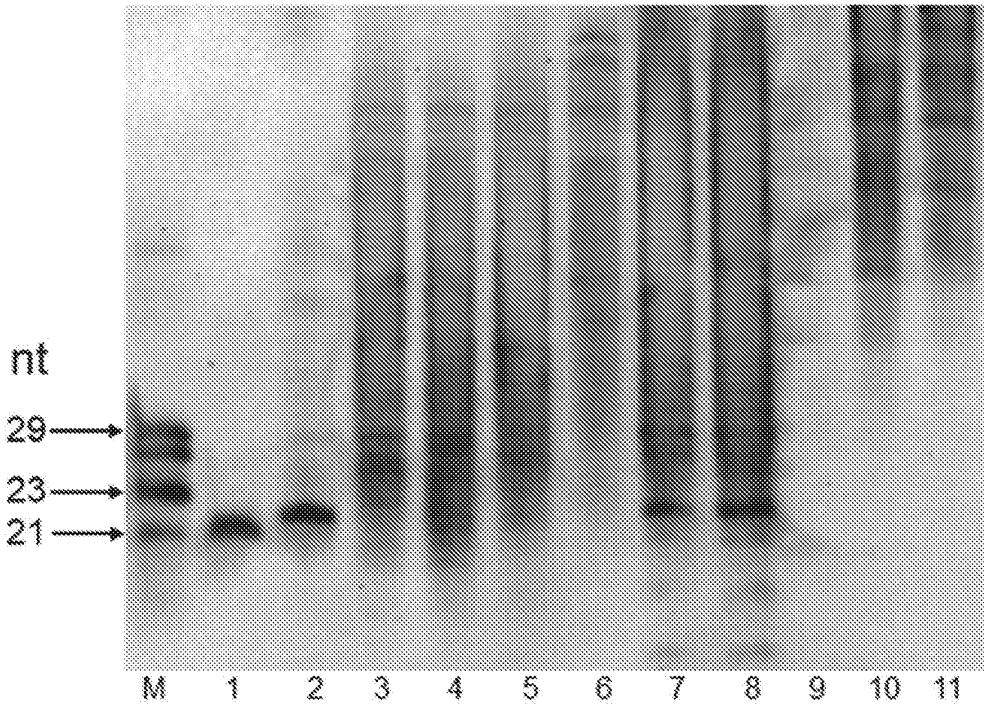


FIGURE 28