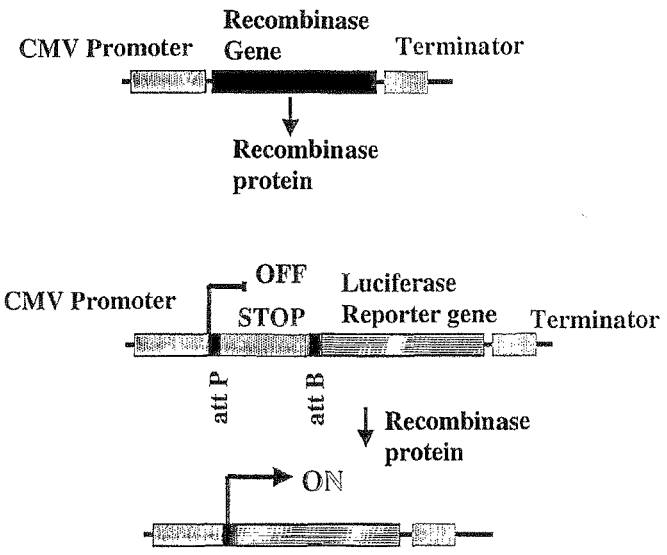

Recombinase
CMV Promoter
Gene
Terminator
Recombinase
protein
OFF
Luciferase
CMV Promoter
STOP
Reporter gene
Terminator
att P
att B
Recombinase
protein
ON

Figure 1

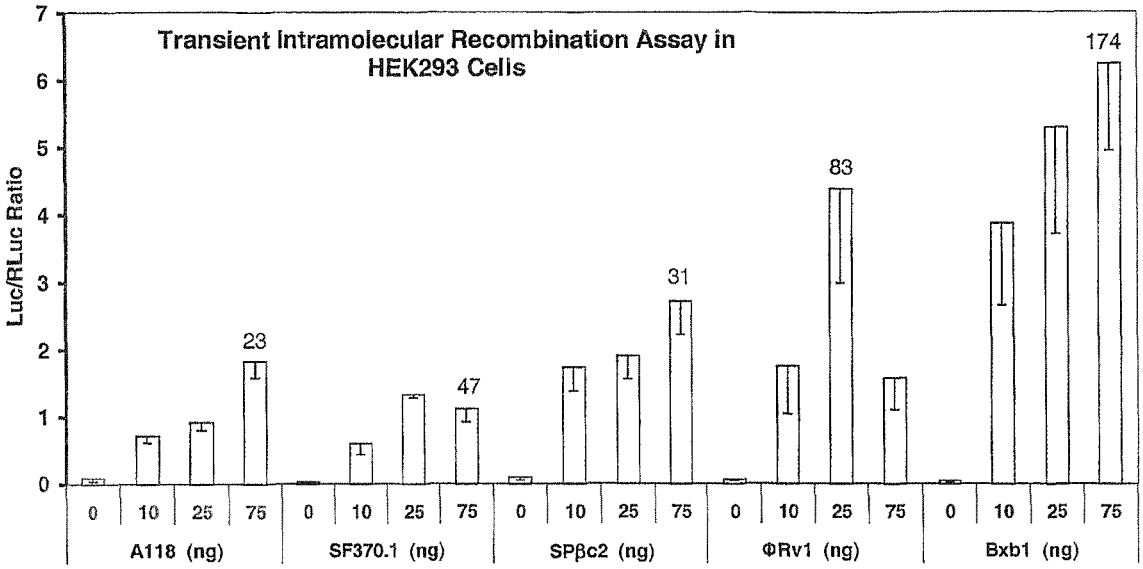

Transient Intramolecular Recombination Assay in HEK293 Cells
Luc/RLuc Ratio
0
1
2
3
4
5
6
7
23
47
31
83
174
0
10
25
75
A118 (ng)
SF370.1 (ng)
SPβc2 (ng)
ΦRv1 (ng)
Bxb1 (ng)

Figure 2

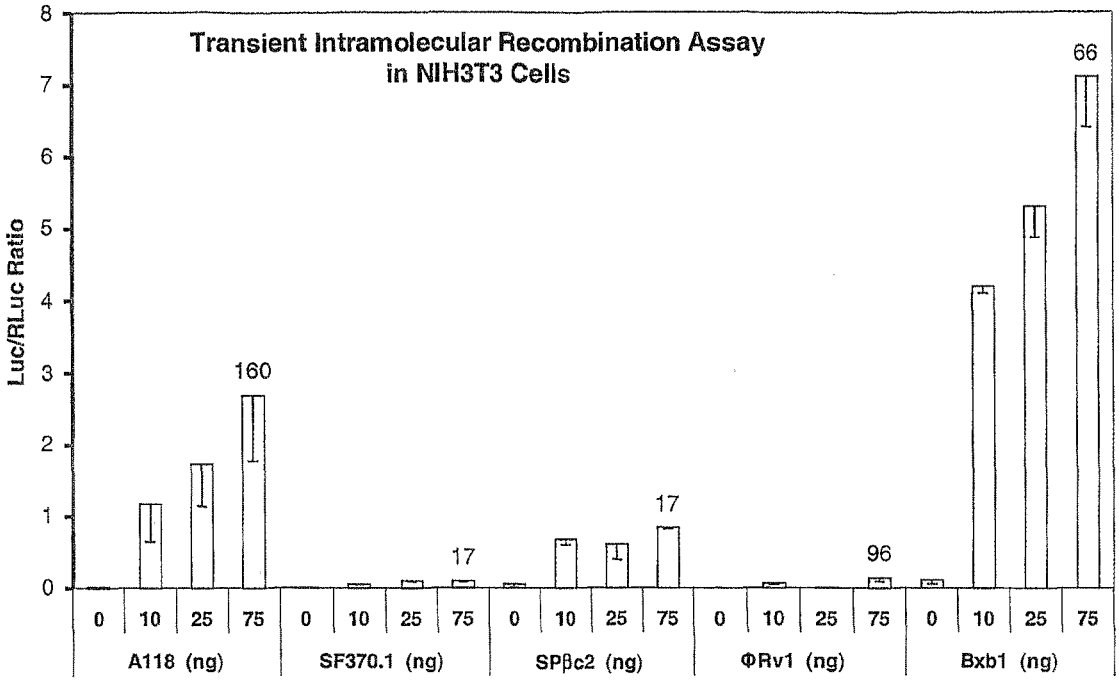

Transient Intramolecular Recombination Assay
in NIH3T3 Cells
Luc/RLuc Ratio
0
1
2
3
4
5
6
7
8
160
17
17
96
66
0
10
25
75
A118 (ng)
SF370.1 (ng)
SPβc2 (ng)
ΦRv1 (ng)
Bxb1 (ng)

Figure 3

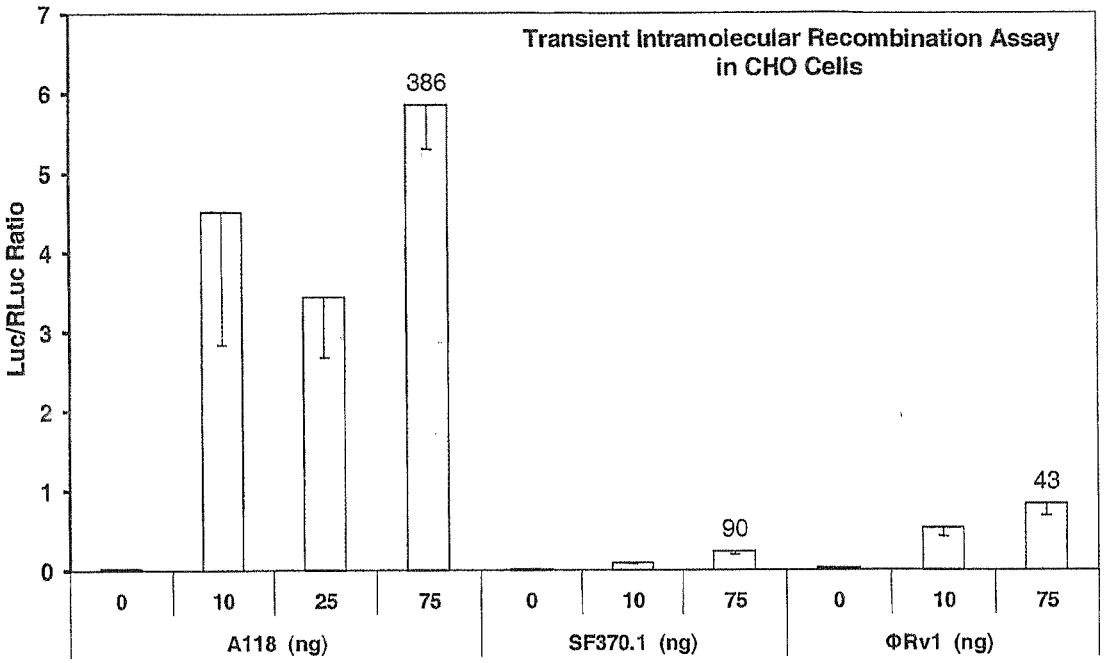

Transient Intramolecular Recombination Assay
in CHO Cells
Luc/RLuc Ratio
7
6
5
4
3
2
1
0
386
90
43
0
10
25
75
0
10
75
0
10
75
A118 (ng)
SF370.1 (ng)
ΦRv1 (ng)

Figure 4

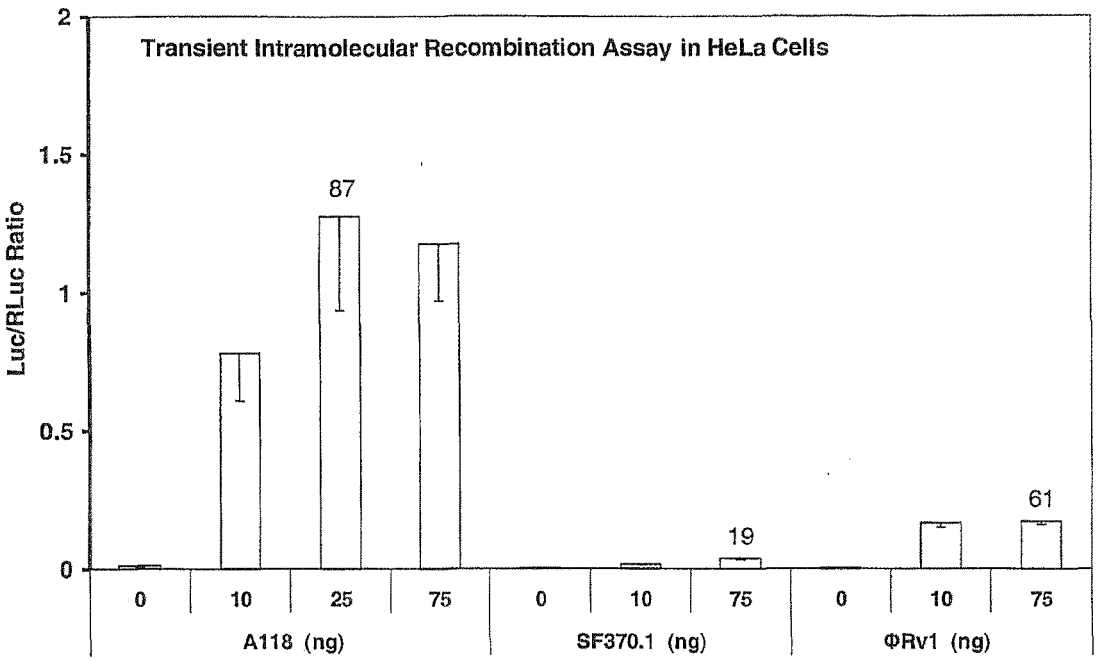

Transient Intramolecular Recombination Assay in HeLa Cells
Luc/RLuc Ratio
2
1.5
1
0.5
0
87
19
61
0
10
25
75
0
10
75
0
10
75
A118 (ng)
SF370.1 (ng)
ΦRv1 (ng)

Figure 5

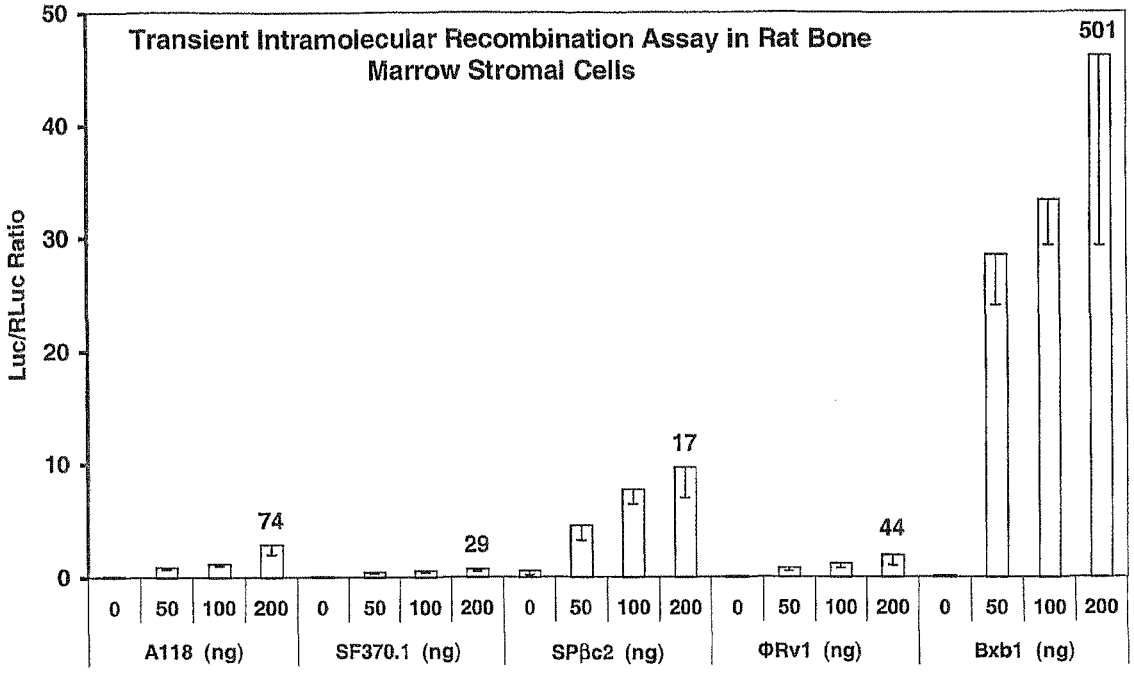

Transient Intramolecular Recombination Assay in Rat Bone Marrow Stromal Cells
Luc/RLuc Ratio
50
40
30
20
10
0
74
29
17
44
501
0 50 100 200 0 50 100 200 0 50 100 200 0 50 100 200 0 50 100 200
A118 (ng)
SF370.1 (ng)
SPβc2 (ng)
ΦRv1 (ng)
Bxb1 (ng)

Figure 6

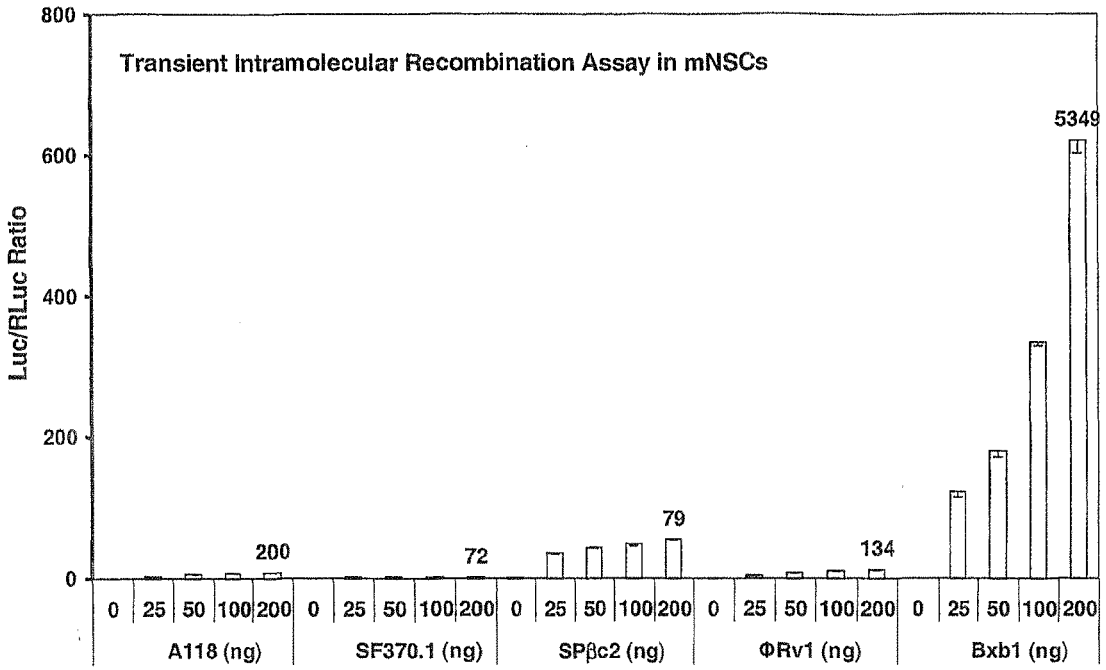

Transient Intramolecular Recombination Assay in mNSCs
Luc/RLuc Ratio
800
600
400
200
0
200
72
79
134
5349
0 25 50 100 200 0 25 50 100 200 0 25 50 100 200 0 25 50 100 200 0 25 50 100 200
A118 (ng)
SF370.1 (ng)
SPβc2 (ng)
ΦRv1 (ng)
Bxb1 (ng)

Figure 7

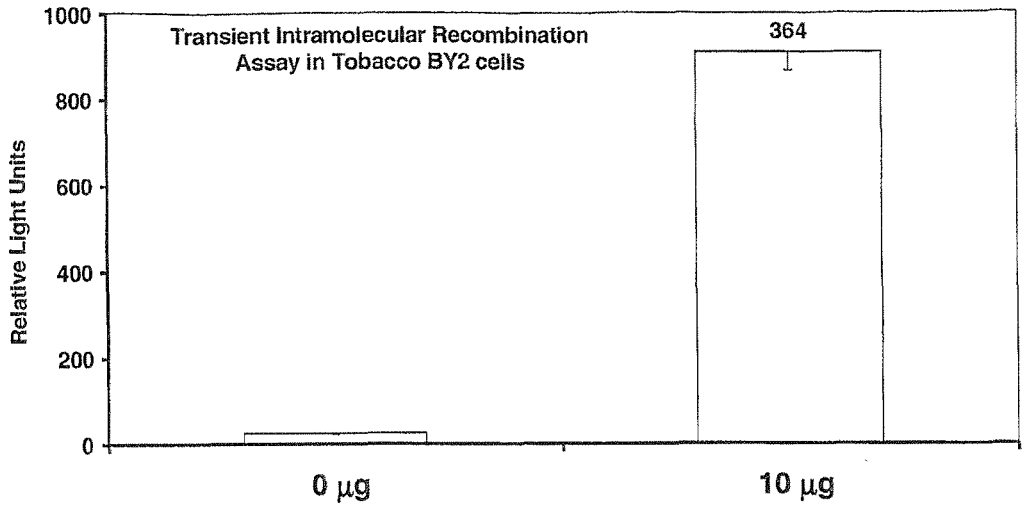

Transient Intramolecular Recombination
Assay in Tobacco BY2 cells
364
Relative Light Units
1000
800
600
400
200
0
0 µg
10 µg

Figure 8

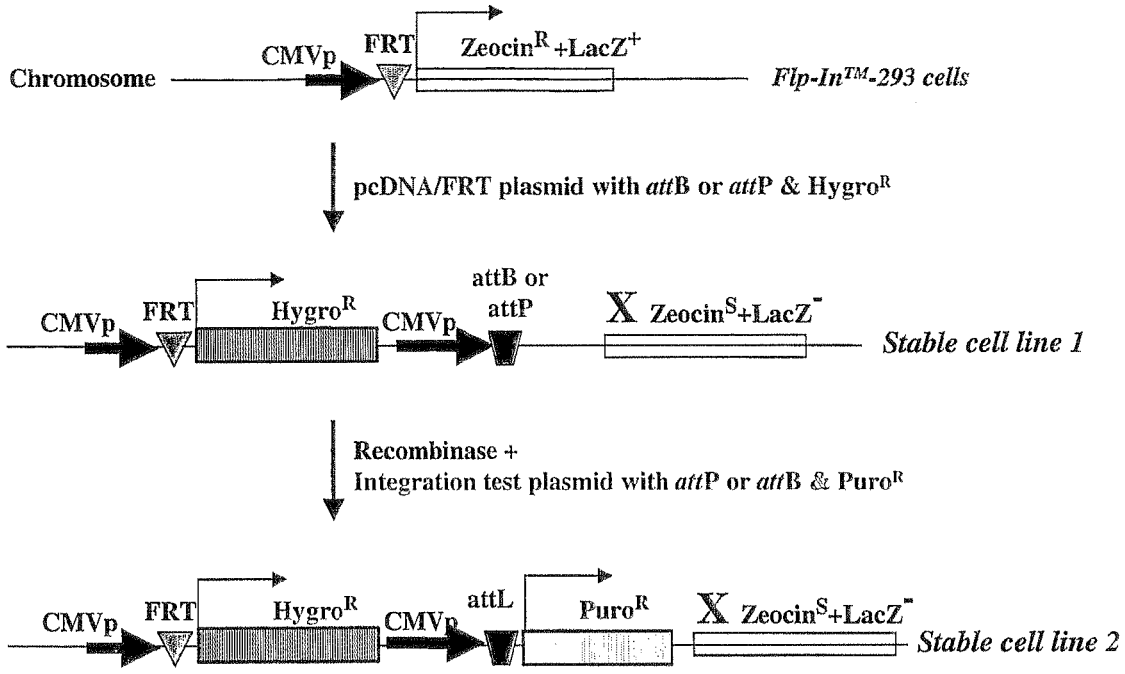

Chromosome
CMVp
FRT
Zeocin^R +LacZ$^+$
Flp-In™-293 cells
pcDNA/FRT plasmid with *att*B or *att*P & Hygro^R
CMVp
FRT
Hygro^R
CMVp
attB or attP
X Zeocin^S+LacZ$^-$
Stable cell line 1
Recombinase +
Integration test plasmid with *att*P or *att*B & Puro^R
CMVp
FRT
Hygro^R
CMVp
attL
Puro^R
X Zeocin^S+LacZ$^-$
Stable cell line 2

Figure 9

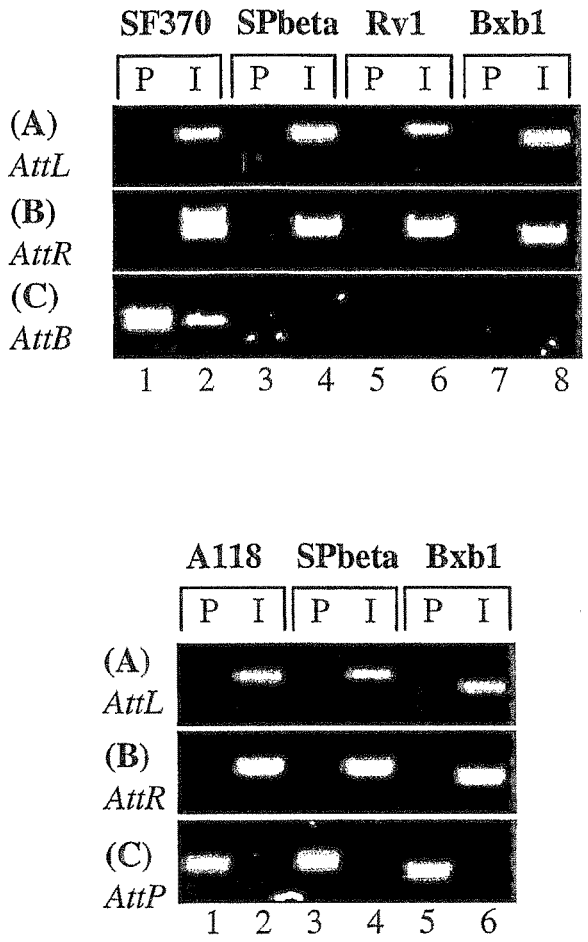

SF370 SPbeta Rv1 Bxb1
P I P I P I P I
(A)
AttL
(B)
AttR
(C)
AttB
1 2 3 4 5 6 7 8
A118 SPbeta Bxb1
P I P I P I
(A)
AttL
(B)
AttR
(C)
AttP
1 2 3 4 5 6

Figure 10

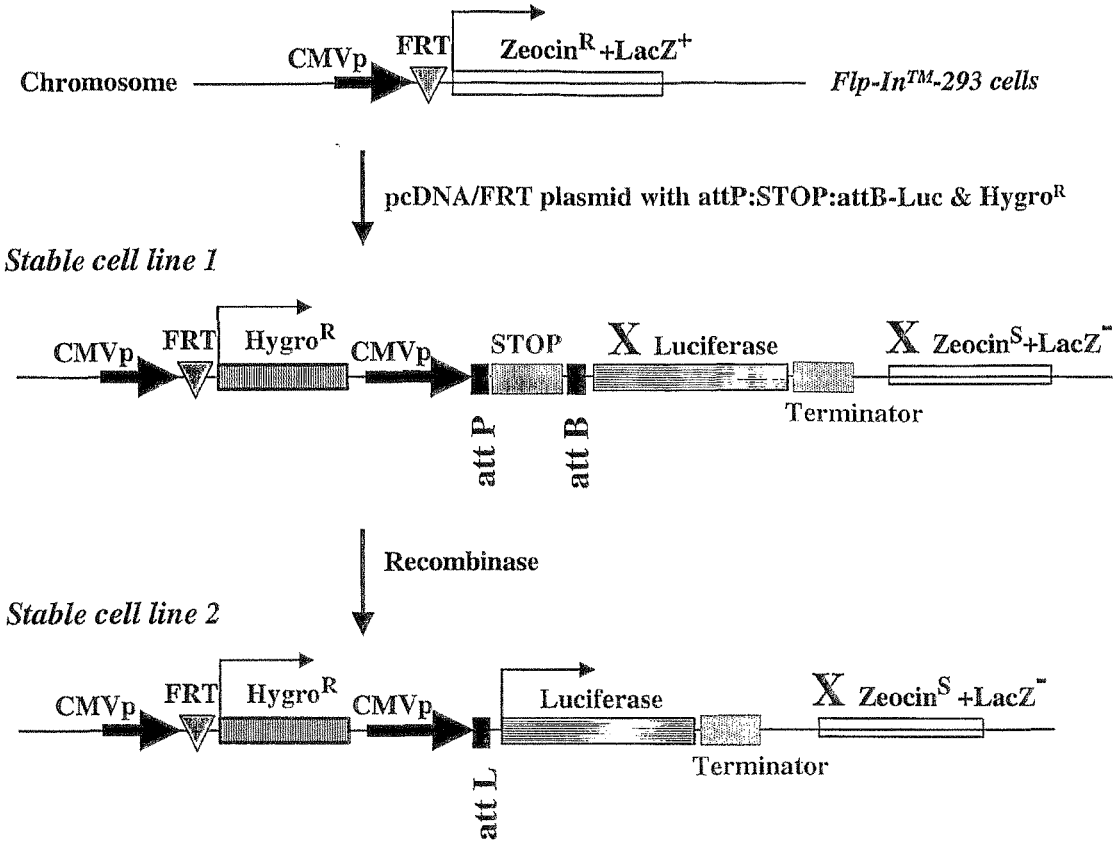

Chromosome
CMVp
FRT
Zeocin^R+LacZ$^+$
Flp-In™-293 cells
pcDNA/FRT plasmid with attP:STOP:attB-Luc & Hygro^R
Stable cell line 1
CMVp
FRT
Hygro^R
CMVp
STOP
X Luciferase
X Zeocin^S+LacZ$^-$
Terminator
att P
att B
Recombinase
Stable cell line 2
CMVp
FRT
Hygro^R
CMVp
Luciferase
X Zeocin^S +LacZ$^-$
Terminator
att L

Figure 11

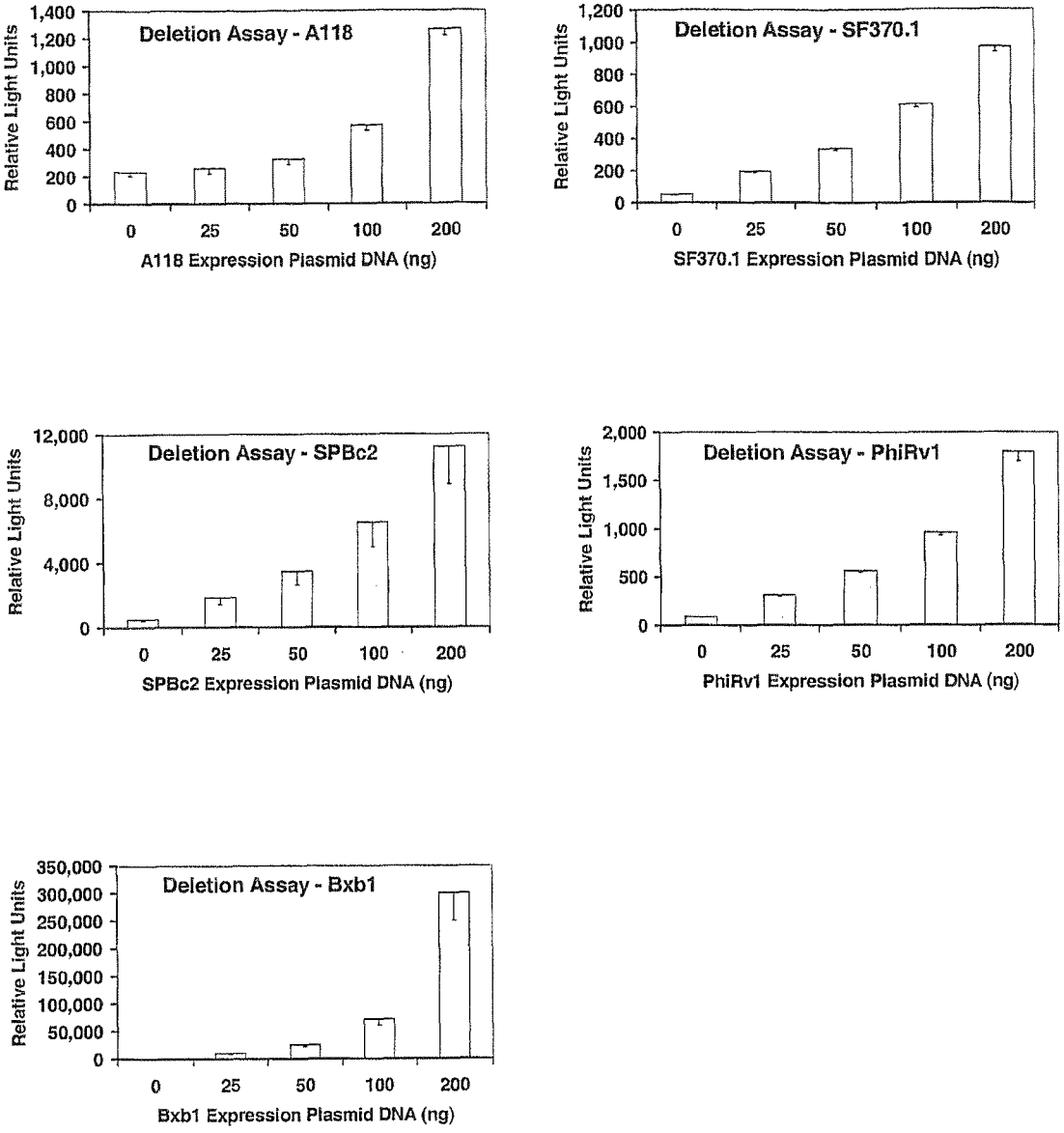

Deletion Assay - A118
Relative Light Units
1,400
1,200
1,000
800
600
400
200
0
0
25
50
100
200
A118 Expression Plasmid DNA (ng)
Deletion Assay - SF370.1
Relative Light Units
1,200
1,000
800
600
400
200
0
0
25
50
100
200
SF370.1 Expression Plasmid DNA (ng)
Deletion Assay - SPBc2
Relative Light Units
12,000
8,000
4,000
0
0
25
50
100
200
SPBc2 Expression Plasmid DNA (ng)
Deletion Assay - PhiRv1
Relative Light Units
2,000
1,500
1,000
500
0
0
25
50
100
200
PhiRv1 Expression Plasmid DNA (ng)
Deletion Assay - Bxb1
Relative Light Units
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
0
25
50
100
200
Bxb1 Expression Plasmid DNA (ng)

Figure 12

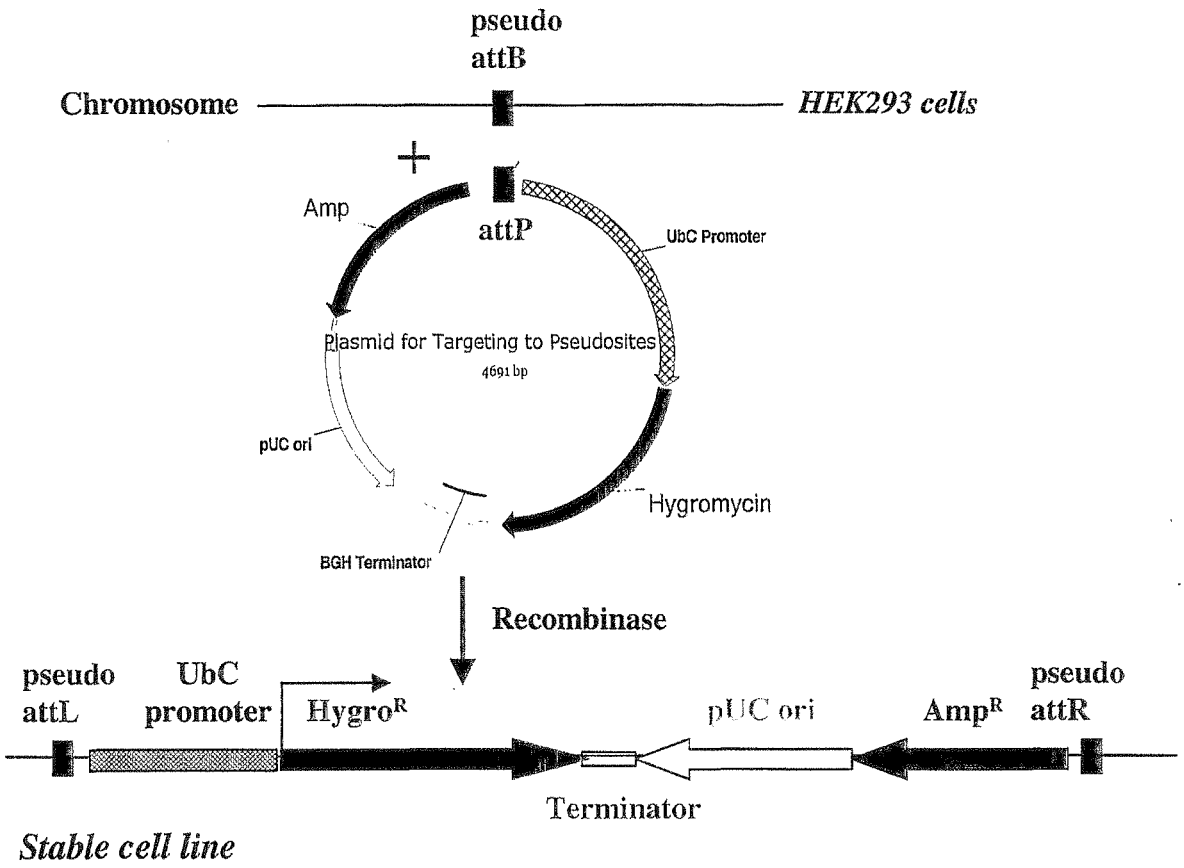

pseudo
attB
Chromosome
HEK293 cells
Amp
attP
UbC Promoter
Plasmid for Targeting to Pseudosites
4691 bp
pUC ori
Hygromycin
BGH Terminator
Recombinase
pseudo
attL
UbC
promoter
Hygro^R
pUC ori
Amp^R
pseudo
attR
Terminator
Stable cell line

Figure 13

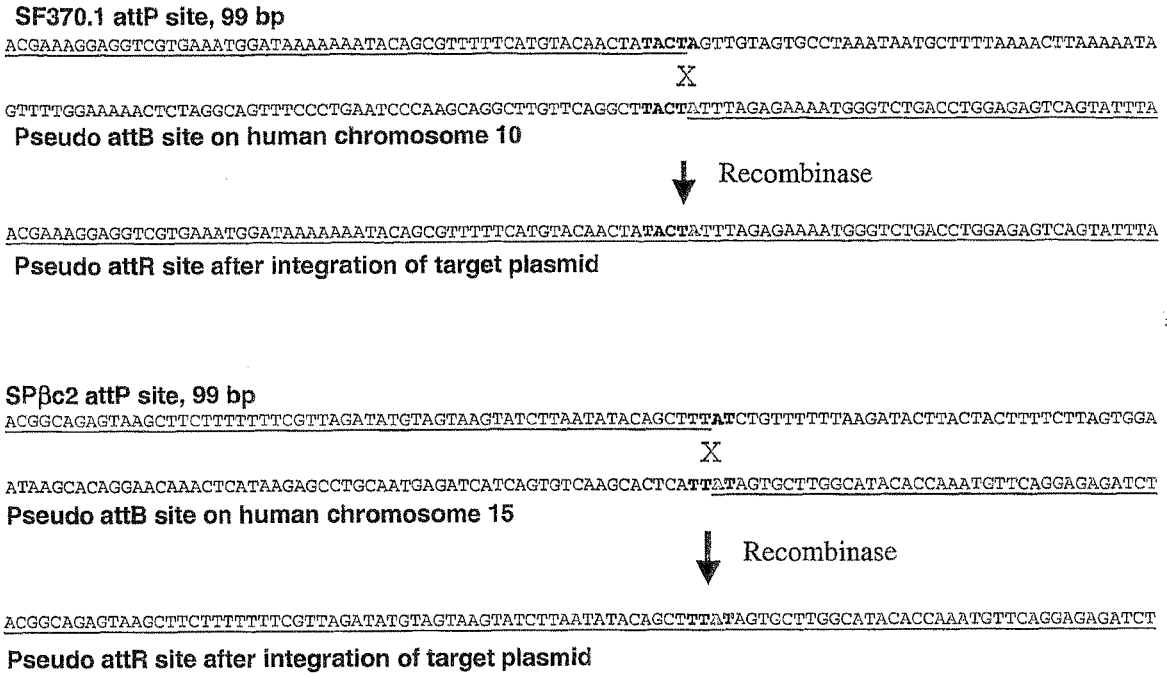

SF370.1 attP site, 99 bp
ACGAAAGGAGGTCGTGAAATGGATAAAAAAATACAGCGTTTTTCATGTACAACTATACTAGTTGTAGTGCCTAAATAATGCTTTTAAAACTTAAAAATA
X
GTTTTGGAAAAACTCTAGGCAGTTTCCCTGAATCCCAAGCAGGCTTGTTCAGGCTTACTATTTAGAGAAAATGGGTCTGACCTGGAGAGTCAGTATTTA
Pseudo attB site on human chromosome 10
Recombinase
ACGAAAGGAGGTCGTGAAATGGATAAAAAAATACAGCGTTTTTCATGTACAACTATACTATTTAGAGAAAATGGGTCTGACCTGGAGAGTCAGTATTTA
Pseudo attR site after integration of target plasmid
SPβc2 attP site, 99 bp
ACGGCAGAGTAAGCTTCTTTTTTTCGTTAGATATGTAGTAAGTATCTTAATATACAGCTTTATCTGTTTTTTAAGATACTTACTACTTTTCTTAGTGGA
X
ATAAGCACAGGAACAAACTCATAAGAGCCTGCAATGAGATCATCAGTGTCAAGCACTCATTATAGTGCTTGGCATACACCAAATGTTCAGGAGAGATCT
Pseudo attB site on human chromosome 15
Recombinase
ACGGCAGAGTAAGCTTCTTTTTTTCGTTAGATATGTAGTAAGTATCTTAATATACAGCTTTATAGTGCTTGGCATACACCAAATGTTCAGGAGAGATCT
Pseudo attR site after integration of target plasmid

Figure 14