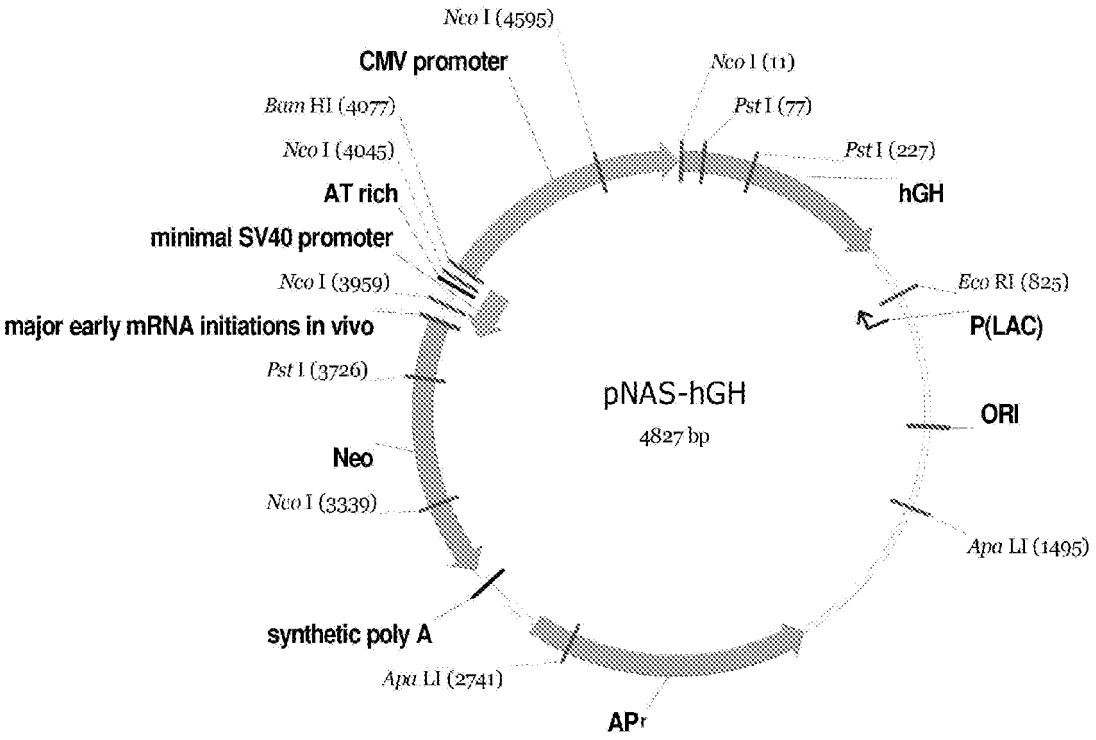

Nco I (4595)
CMV promoter
Nco I (11)
Bam HI (4077)
Pst I (77)
Nco I (4045)
Pst I (227)
AT rich
hGH
minimal SV40 promoter
Nco I (3959)
Eco RI (825)
major early mRNA initiations in vivo
P(LAC)
Pst I (3726)
pNAS-hGH
4827 bp
ORI
Neo
Nco I (3339)
Apa LI (1495)
synthetic poly A
Apa LI (2741)
APr

Figure 1A

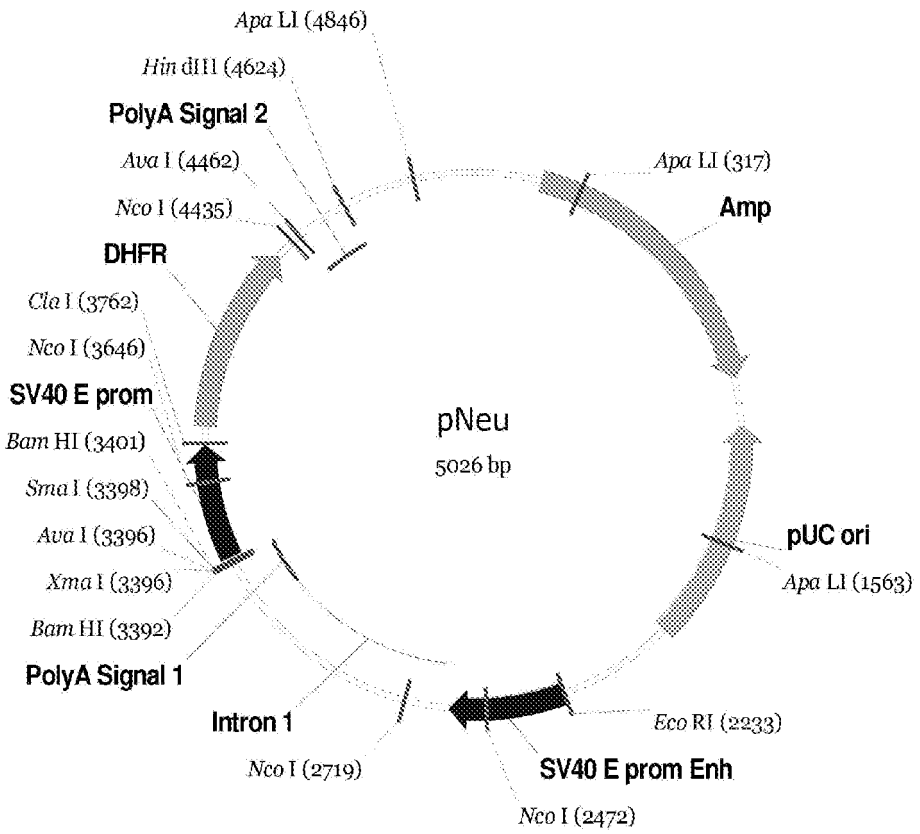

Apa LI (4846)
Hin dIII (4624)
PolyA Signal 2
Ava I (4462)
Nco I (4435)
DHFR
Cla I (3762)
Nco I (3646)
SV40 E prom
Bam HI (3401)
Sma I (3398)
Ava I (3396)
Xma I (3396)
Bam HI (3392)
PolyA Signal 1
Intron 1
Nco I (2719)
Apa LI (317)
Amp
pNeu
5026 bp
pUC ori
Apa LI (1563)
Eco RI (2233)
SV40 E prom Enh
Nco I (2472)

Figure 1B

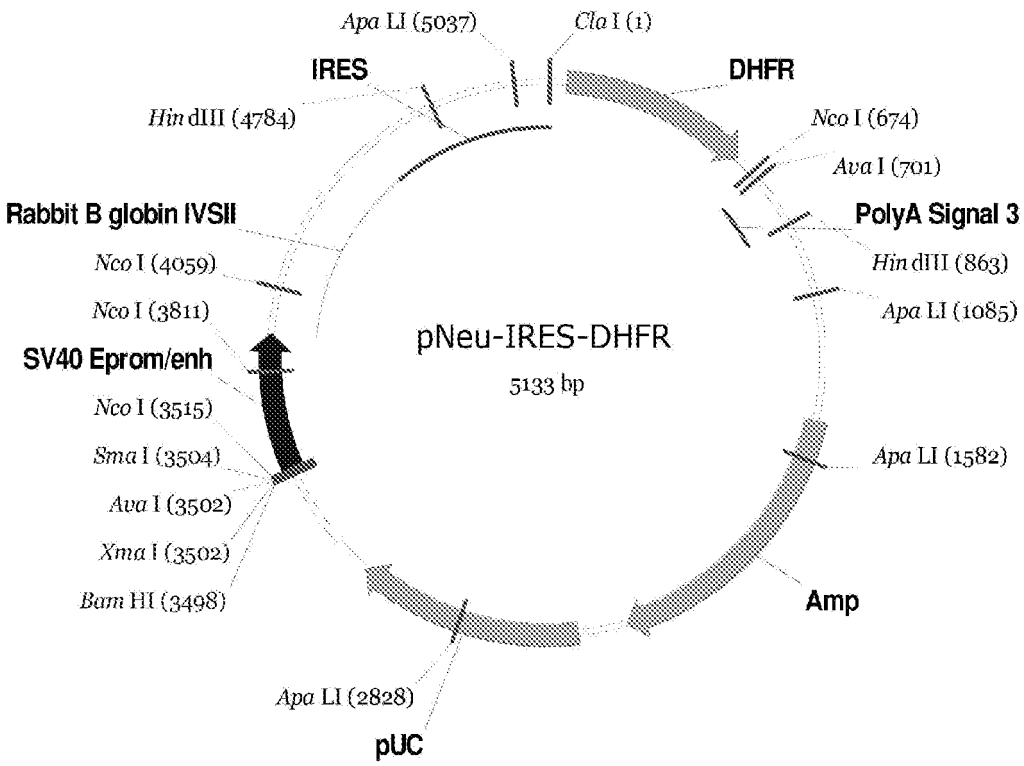

Apa LI (5037)
Cla I (1)
IRES
DHFR
Hin dIII (4784)
Nco I (674)
Ava I (701)
Rabbit B globin IVSII
PolyA Signal 3
Nco I (4059)
Hin dIII (863)
Nco I (3811)
Apa LI (1085)
pNeu-IRES-DHFR
5133 bp
SV40 Eprom/enh
Nco I (3515)
Sma I (3504)
Apa LI (1582)
Ava I (3502)
Xma I (3502)
Amp
Bam HI (3498)
Apa LI (2828)
pUC

Figure 1C

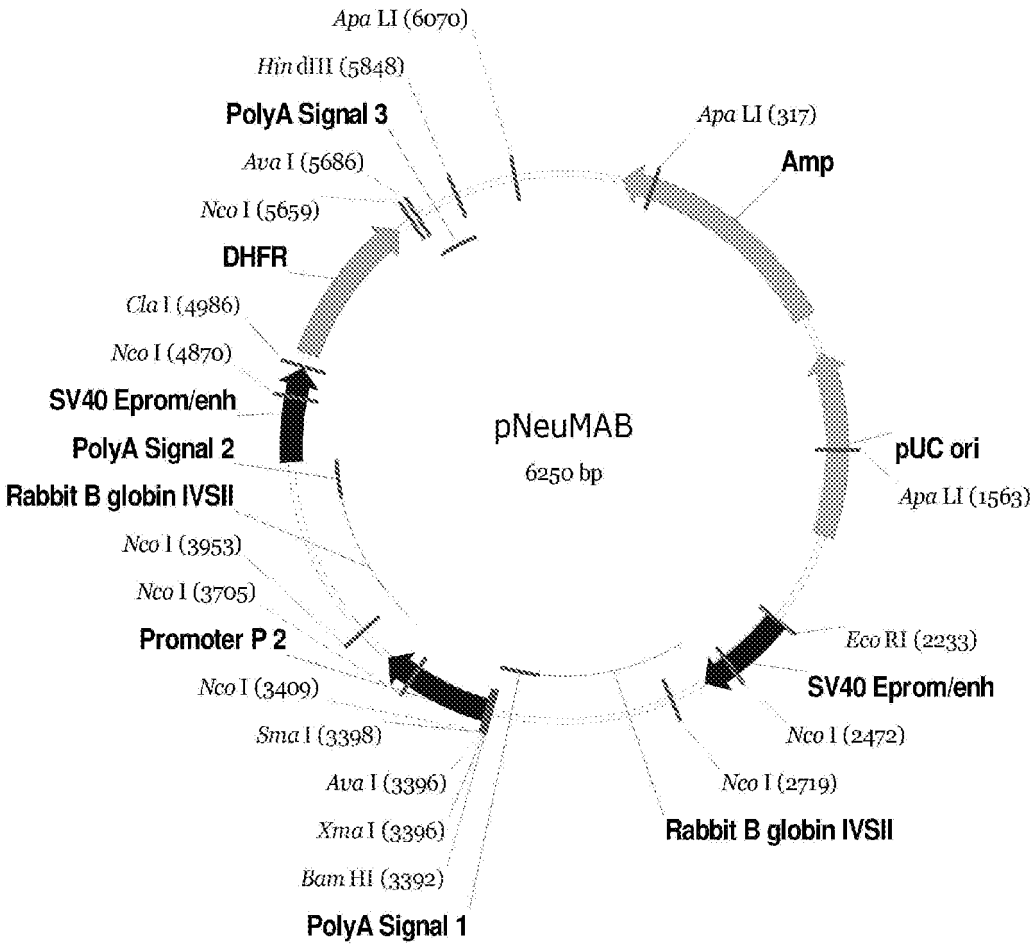

Apa LI (6070)
Hin dIII (5848)
PolyA Signal 3
Ava I (5686)
Nco I (5659)
DHFR
Cla I (4986)
Nco I (4870)
SV40 Eprom/enh
PolyA Signal 2
Rabbit B globin IVSII
Nco I (3953)
Nco I (3705)
Promoter P 2
Nco I (3409)
Sma I (3398)
Ava I (3396)
Xma I (3396)
Bam HI (3392)
PolyA Signal 1
Apa LI (317)
Amp
pNeuMAB
6250 bp
pUC ori
Apa LI (1563)
Eco RI (2233)
SV40 Eprom/enh
Nco I (2472)
Nco I (2719)
Rabbit B globin IVSII

Figure 1D

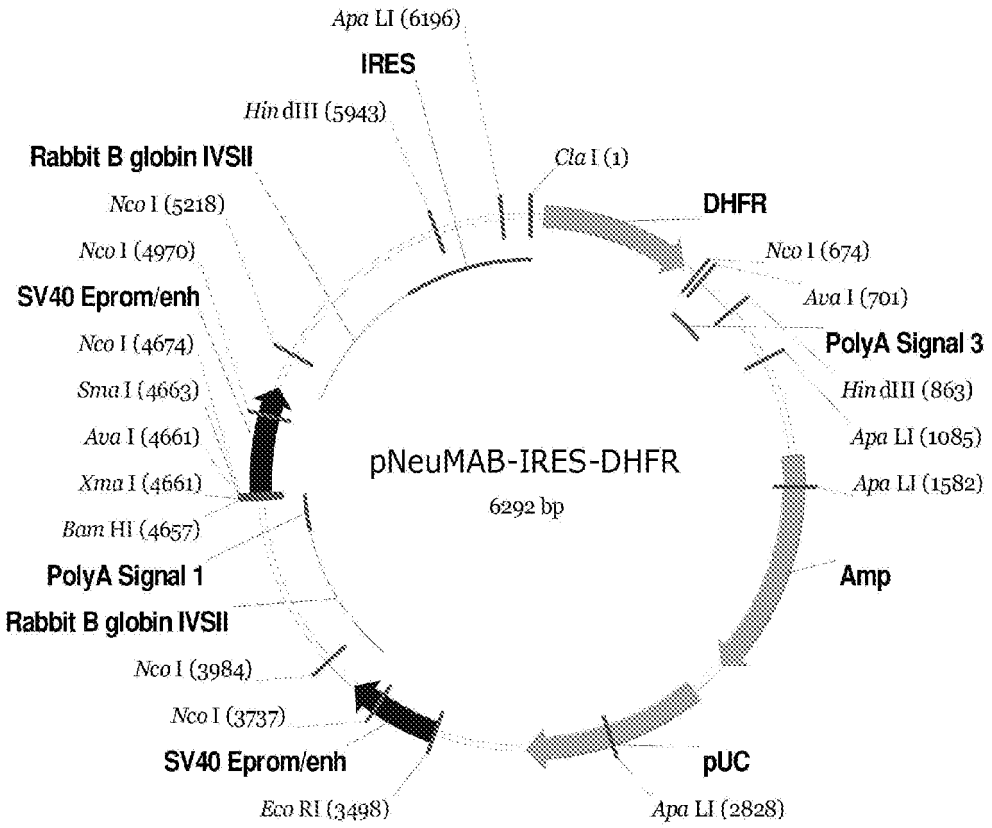

Apa LI (6196)
IRES
Hin dIII (5943)
Rabbit B globin IVSII
Nco I (5218)
Nco I (4970)
SV40 Eprom/enh
Nco I (4674)
Sma I (4663)
Ava I (4661)
Xma I (4661)
Bam HI (4657)
PolyA Signal 1
Rabbit B globin IVSII
Nco I (3984)
Nco I (3737)
SV40 Eprom/enh
Eco RI (3498)
Cla I (1)
DHFR
Nco I (674)
Ava I (701)
PolyA Signal 3
Hin dIII (863)
Apa LI (1085)
Apa LI (1582)
Amp
pUC
Apa LI (2828)
pNeuMAB-IRES-DHFR
6292 bp

Figure 1E

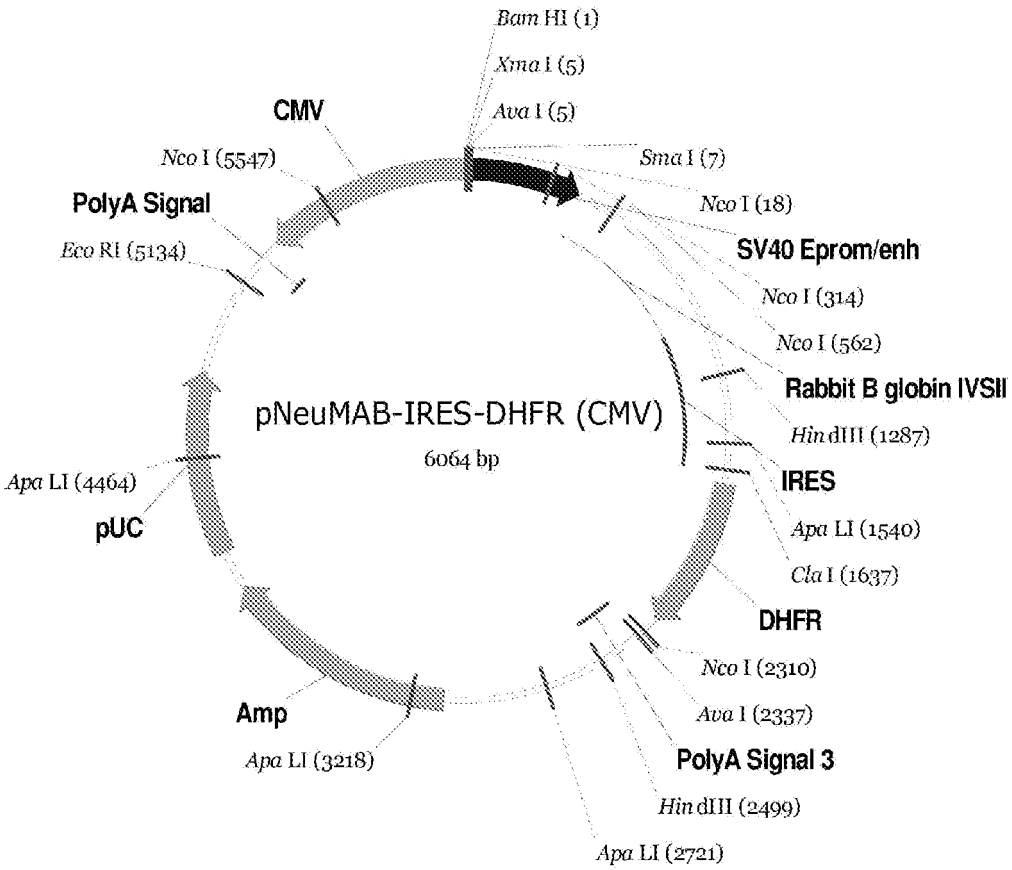

pNeuMAB-IRES-DHFR (CMV)
6064 bp
Bam HI (1)
Xma I (5)
Ava I (5)
Sma I (7)
Nco I (18)
SV40 Eprom/enh
Nco I (314)
Nco I (562)
Rabbit B globin IVSII
Hin dIII (1287)
IRES
Apa LI (1540)
Cla I (1637)
DHFR
Nco I (2310)
Ava I (2337)
PolyA Signal 3
Hin dIII (2499)
Apa LI (2721)
Amp
Apa LI (3218)
pUC
Apa LI (4464)
PolyA Signal
Eco RI (5134)
Nco I (5547)
CMV

Figure 1F

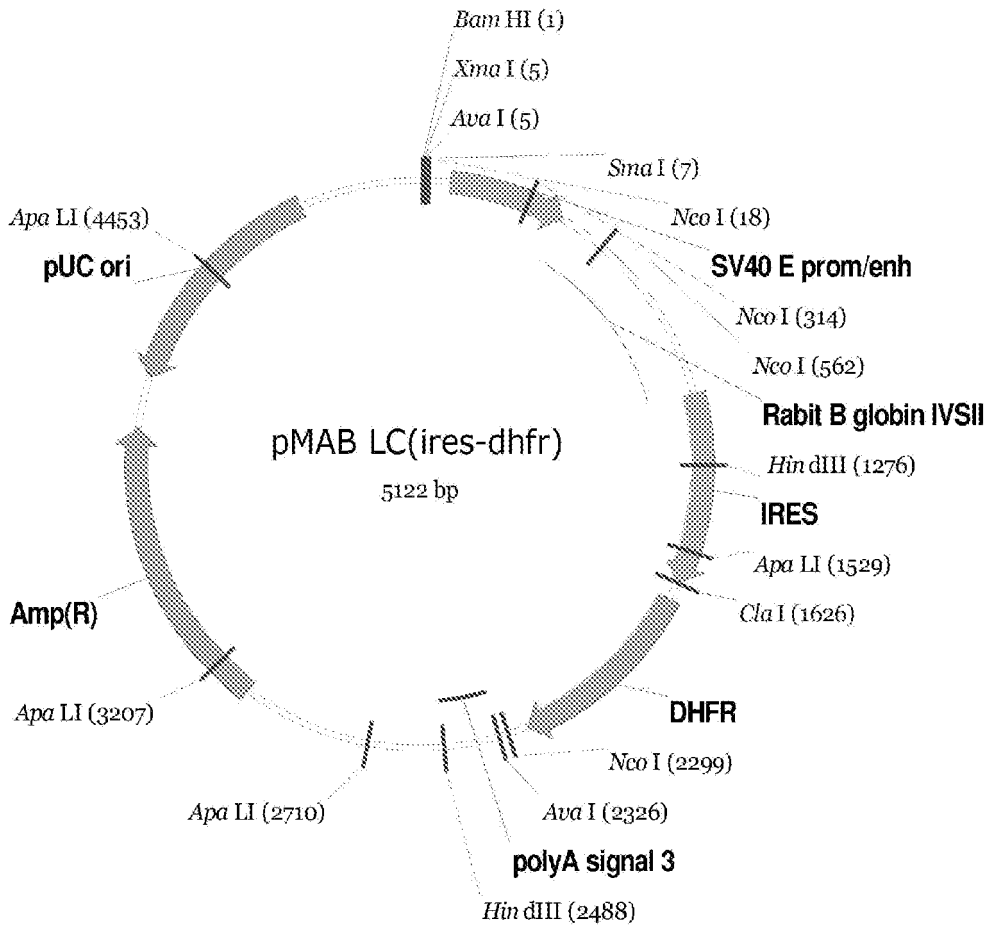

Bam HI (1)
Xma I (5)
Ava I (5)
Sma I (7)
Nco I (18)
SV40 E prom/enh
Nco I (314)
Nco I (562)
Rabit B globin IVSII
Hin dIII (1276)
IRES
Apa LI (1529)
Cla I (1626)
DHFR
Nco I (2299)
Ava I (2326)
polyA signal 3
Hin dIII (2488)
Apa LI (2710)
Apa LI (3207)
Amp(R)
Apa LI (4453)
pUC ori
pMAB LC(ires-dhfr)
5122 bp

Figure 1G

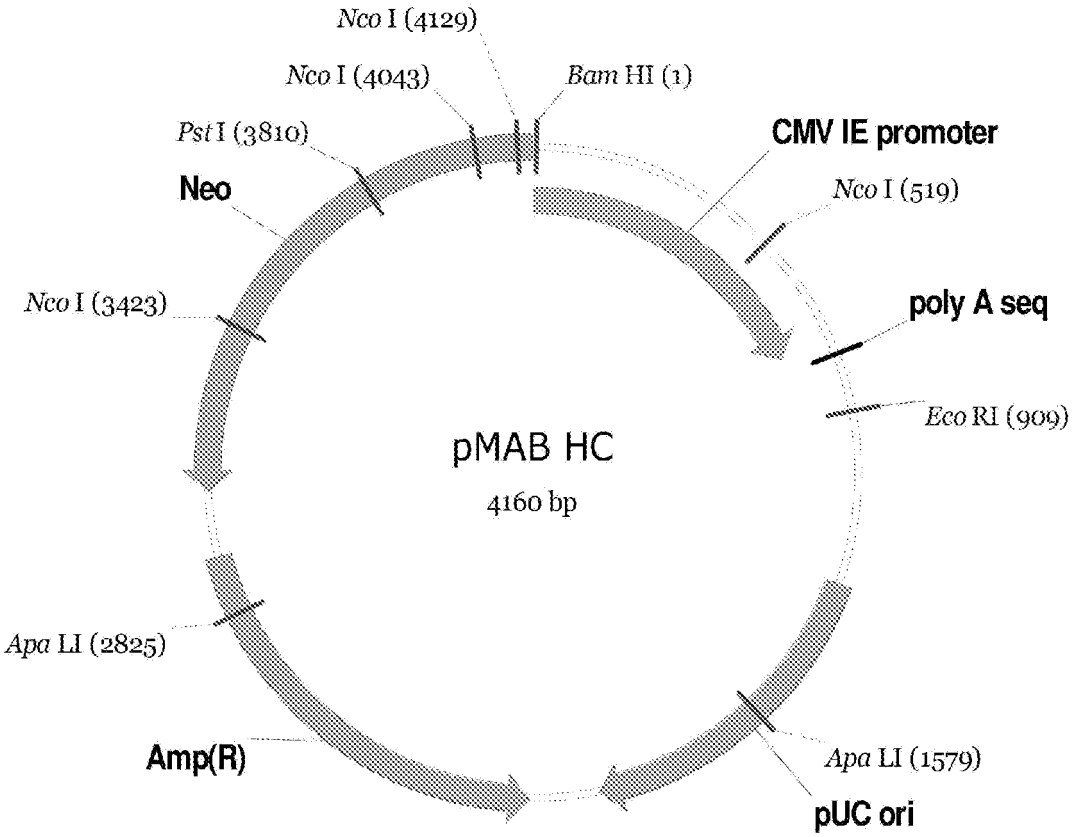

Nco I (4129)
Nco I (4043)
Bam HI (1)
Pst I (3810)
CMV IE promoter
Neo
Nco I (519)
Nco I (3423)
poly A seq
Eco RI (909)
pMAB HC
4160 bp
Apa LI (2825)
Amp(R)
Apa LI (1579)
pUC ori

Figure 1H

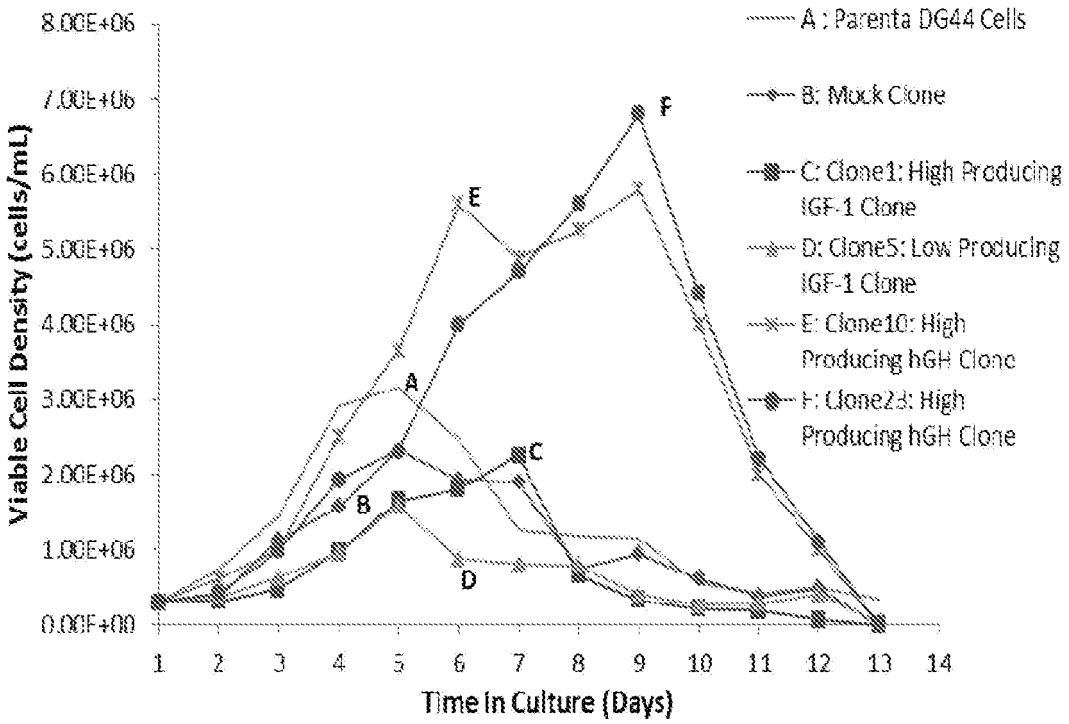

8.00E+06
7.00E+06
6.00E+06
5.00E+06
4.00E+06
3.00E+06
2.00E+06
1.00E+06
0.00E+00
Viable Cell Density (cells/mL)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Time in Culture (Days)
A
B
C
D
E
F
A : Parenta DG44 Cells
B: Mock Clone
C: Clone1: High Producing IGF-1 Clone
D: Clone5: Low Producing IGF-1 Clone
E: Clone10: High Producing hGH Clone
F: Clone23: High Producing hGH Clone

Figure 2

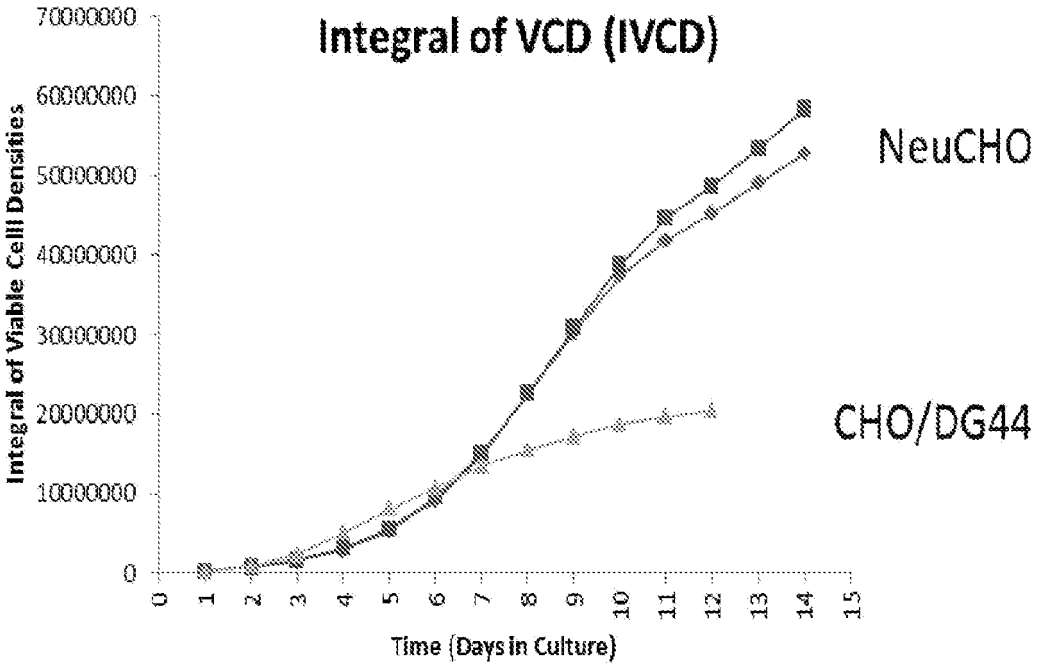

Integral of VCD (IVCD)
Integral of Viable Cell Densities
70000000
60000000
50000000
40000000
30000000
20000000
10000000
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Time (Days in Culture)
NeuCHO
CHO/DG44

Figure 3

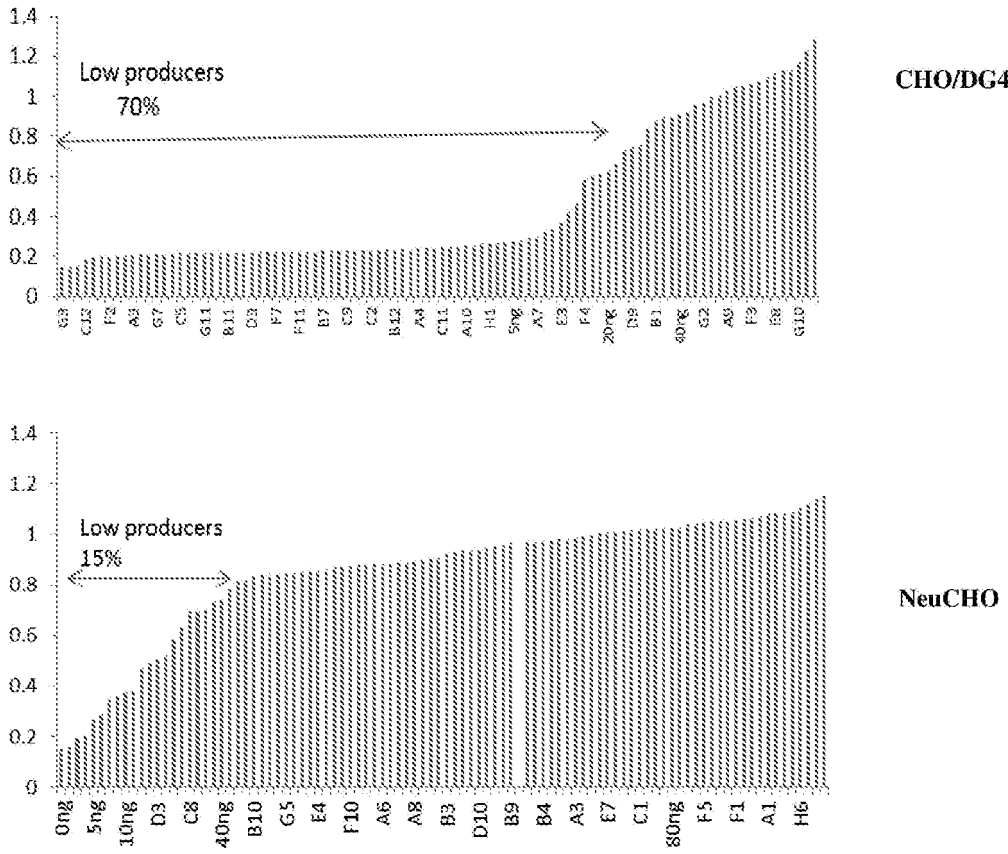

1.4
1.2
1
0.8
0.6
0.4
0.2
0
Low producers
70%
CHO/DG44
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Low producers
15%
0ng
5ng
10ng
D3
C8
40ng
B10
G5
E4
F10
A6
A8
B3
D10
B9
B4
A3
E7
C1
80ng
F5
F1
A1
H6
NeuCHO

Figure 4