
SV40 Promoter
GPT
IRES
eGFP
SV40pA
Tn-resistance marker
COI

FIG. 1

```
   **** *:*   ***:**. ********:*******.*****:********  :*******
 1 MWAFSELP--MPLLINLIVSLLGFVATVTLIPAFRGHFIAARLCGQDLNKTSRQQIPESQ     58  GPT_HUMAN
 1 MWAFSELP--MPLLVNLIVSLLGFVATVTLIPAFRGHFIAARLCGQDLNKTSRQQIPESQ     58  GPT_MACMU
 1 MWAFSELP--MPLLINLIVSLLGFVATVTLIPAFRGHFIAARLCGQDLNKTSRQQIPESQ     58  GPT_PANTR
 1 MWAFPELP--MPLLVNLVGSLLGFVATVTLIPAFRGHFIAAHLCGQDLNKTGRQQIPESQ     58  GPT_CANFA
 1 MWAFSEVP--IPLLVNLIGSLLGFVATLTLIPAFRGHFIAARLCGQDLNKTNRQQIPESQ     58  GPT_CAVPO
 1 MWAFPELPLPLPLLVNLIGSLLGFVATVTLIPAFRSHFIAARLCGQDLNKLSRQQIPESQ     60  GPT_RAT
 1 MWAFPELPLPLPLLVNLIGSLLGFVATVTLIPAFRSHFIAARLCGQDLNKLSQQQIPESQ     60  GPT_MOUSE
 1 MWAFPELPL--PLLVNLFGSLLGFVATVTLIPAFRSHFIAARLCGQDLNKLSRQQIPESQ     58  GPT_CRIGR

   ***.*********************::**********************************
59 GVISGAVFLIILFCFIPFPFLNCFVKEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    118  GPT_HUMAN
59 GVISGAVFLIILFCFIPFPFLNCFVKEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    118  GPT_MACMU
59 GVISGAVFLIILFCFIPFPFLNCFVKEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    118  GPT_PANTR
59 GVISGAVFLIILFCFIPFPFLNCFMEEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    118  GPT_CANFA
59 GVISGAVFLIILFCFIPFPFLNCFVKEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    118  GPT_CAVPO
61 GVISGAVFLIILFCFIPFPFLNCFVEEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    120  GPT_RAT
61 GVISGAVFLIILFCFIPFPFLNCFVEEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    120  GPT_MOUSE
59 GVICGAVFLIILFCFIPFPFLNCFVEEQCKAFPHHEFVALIGALLAICCMIFLGFADDVL    118  GPT_CRIGR

   ************************************* :**********************
119 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRPILGLHLDLGILYYVYMGLLAV    178  GPT_HUMAN
119 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRPILGLHLDLGILYYVYMGLLAV    178  GPT_MACMU
119 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRPILGLHLDLGILYYVYMGLLAV    178  GPT_PANTR
119 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRPILGLHLDLGILYYVYMGLLAV    178  GPT_CANFA
119 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRPVLGLHLDLGILYYVYMGLLAV    178  GPT_CAVPO
121 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRWILGLHLDLGILYYVYMGLLAV    180  GPT_RAT
121 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRWILGLHLDLGILYYVYMGLLAV    180  GPT_MOUSE
119 NLRWRHKLLLPTAASLPLLMVYFTNFGNTTIVVPKPFRWILGLHLDLGILYYVYMGLLAV    178  GPT_CRIGR
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FIG. 2A

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    ************************************:** ****:******:*********
179 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDCRDDHVFSLYFMIPFFFTTLGL  238 GPT_HUMAN
179 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDCRDDHVFSLYFMIPFFFTTLGL  238 GPT_MACMU
179 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDCRDDHVFSLYFMIPFFFTTLGL  238 GPT_PANTR
179 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDYRDDHVFSLYFMIPFFFTTLGL  238 GPT_CANFA
179 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELQGDYRDDHVFSLYFMIPFFFTTLGL  238 GPT_CAVPO
181 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDYRDDHVFSLYFMMPFFFTTLGL  240 GPT_RAT
181 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDYRDDHIFSLYFMIPFFFTTLGL  240 GPT_MOUSE
179 FCTNAINILAGINGLEAGQSLVISASIIVFNLVELEGDYRDDHVFSLYFMIPFFFTTLGL  238 GPT_CRIGR

    ********:**********************************:*************:: **
239 LYHNWYPSRVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLLHIIP  298 GPT_HUMAN
239 LYHNWYPSRVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLLHIIP  298 GPT_MACMU
239 LYHNWYPSRVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLLHIIP  298 GPT_PANTR
239 LYHNWYPSQVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLLHIIP  298 GPT_CANFA
239 LYHNWYPSQVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLLHIIP  298 GPT_CAVPO
241 LYHNWYPSQVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLFQIIP  300 GPT_RAT
241 LYHNWYPSRVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFMPQVFNFLYSLPQLFHIIP  300 GPT_MOUSE
239 LYHNWYPSQVFVGDTFCYFAGMTFAVVGILGHFSKTMLLFFIPQVFNFLYSLPQLLHAIP  298 GPT_CRIGR

    *****:**** **************:.*****.******  *:***:*:.: *** ****
299 CPRHRIPRLNIKTGKLEMSYSKFKTKSLSFLGTFILKVAESLQLVTVHQSETEDGEFTEC  358 GPT_HUMAN
299 CPRHRIPRLNIKTGKLEMSYSKFKTKSLSFLGTFILKVAESLRLVTIHQSDTEDGEFTEC  358 GPT_MACMU
299 CPRHRIPRLNIKTGKLEMSYSKFKTKSLSFLGTFILKVAESLQLVTVHQSETEDGEFTEC  358 GPT_PANTR
299 CPRHRIPRLNTKTGKLEMSYSKFKTKSLSFLGNFILKVAASLQLVTVHQSENEDGAFTEC  358 GPT_CANFA
299 CPRHRIPRLNTKTGKLEMSYSKFKTNSLSFLGTFILKVAERLQLVTVHRSEGEDGAFTEC  358 GPT_CAVPO
301 CPRHRMPRLNTKTGKLEMSYSKFKTKSLSFLGTFILKVAESLRLVTVHRGESEDGAFTEC  360 GPT_RAT
301 CPRHRMPRLNAKTGKLEMSYSKFKTKNLSFLGTFILKVAENLRLVTVHQGESEDGAFTEC  360 GPT_MOUSE
299 CPRHRIPRLNPKTGKLEMSYSKFKTKNLSFLGTFILKVAERLQLVTVHRGESEDGAFTEC  358 GPT_CRIGR
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FIG. 2B

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    *****:*****::** *******:*****::.** ***************
359 NNMTLINLLLKVLGPIHERNLTLLLLLLQILGSAITFSIRYQLVRLFYDV  408 GPT_HUMAN
359 NNMTLINLLLKIFGPIHERNLTLLLLLLQILGSAFTFSIRYQLVRLFYDV  408 GPT_MACMU
359 NNMTLINLLLKILGPIHERNLTLLLLLLQILGSAITFSIRYQLVRLFYDV  408 GPT_PANTR
359 NNMTLLNLLLKVLGPMHERNLTLLLLLLQILGSAVTFSIRYQLVRLFYDV  408 GPT_CANFA
359 NNMTLINLLLKIFGPIHERNLTLLLLLLQIVGSAVTFSIRYQLVRLFYDV  408 GPT_CAVPO
361 NNMTLINLLLKVFGPTHERNLTLFLLLLQVLSSAVTFSIRYQLVRLFYDV  410 GPT_RAT
361 NNMTLINLLLKVFGPIHERNLTLLLLLLQVLSSAATFSIRYQLVRLFYDV  410 GPT_MOUSE
359 NNMTLINLLLKIFGPIHERNLTLLLLLLQILSSAVTFSIRYQLVRLFYDV  408 GPT_CRIGR
```

FIG. 2C

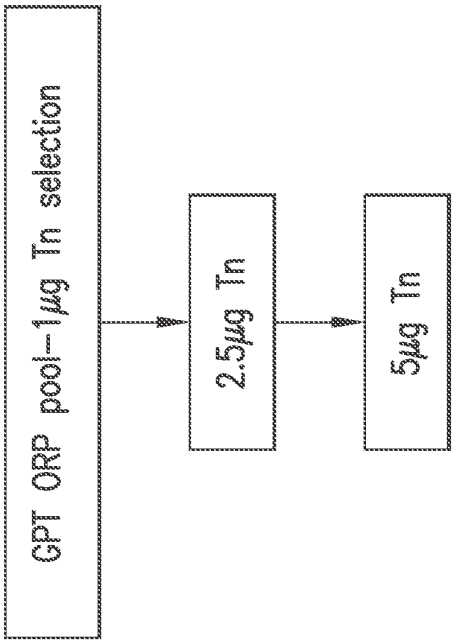

GPT ORP pool–1μg Tn selection
2.5μg Tn
5μg Tn

FIG.3B

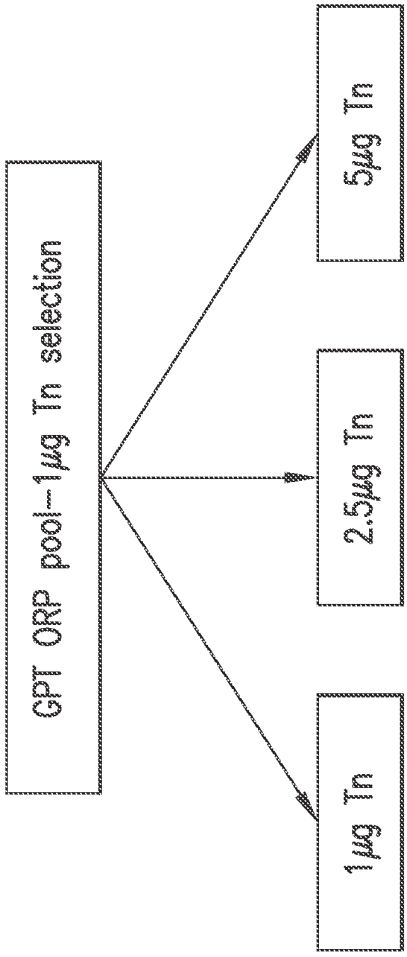
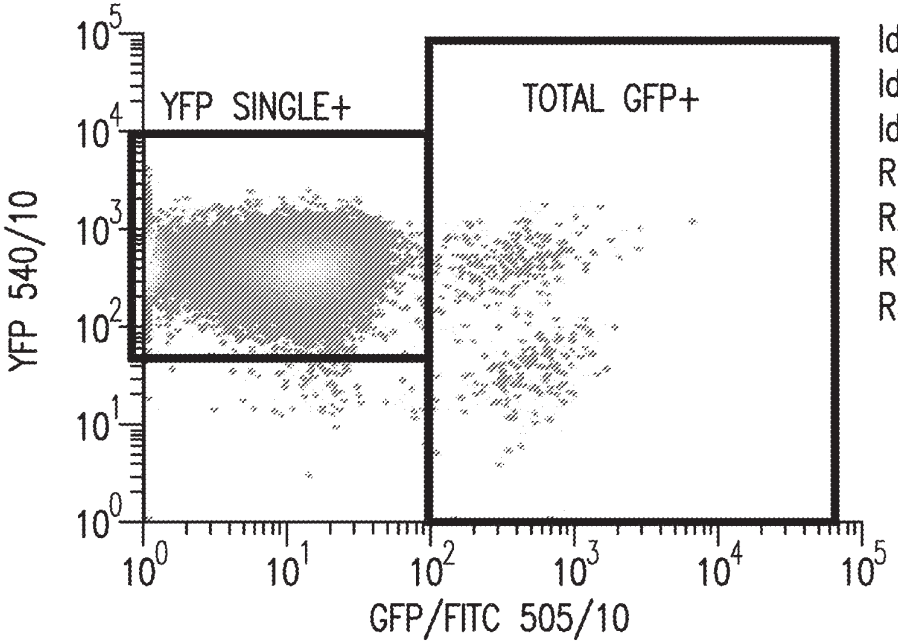

GPT ORP pool–1μg Tn selection
1μg Tn
2.5μg Tn
5μg Tn

FIG.3A

Selection efficiency with Hygromycin



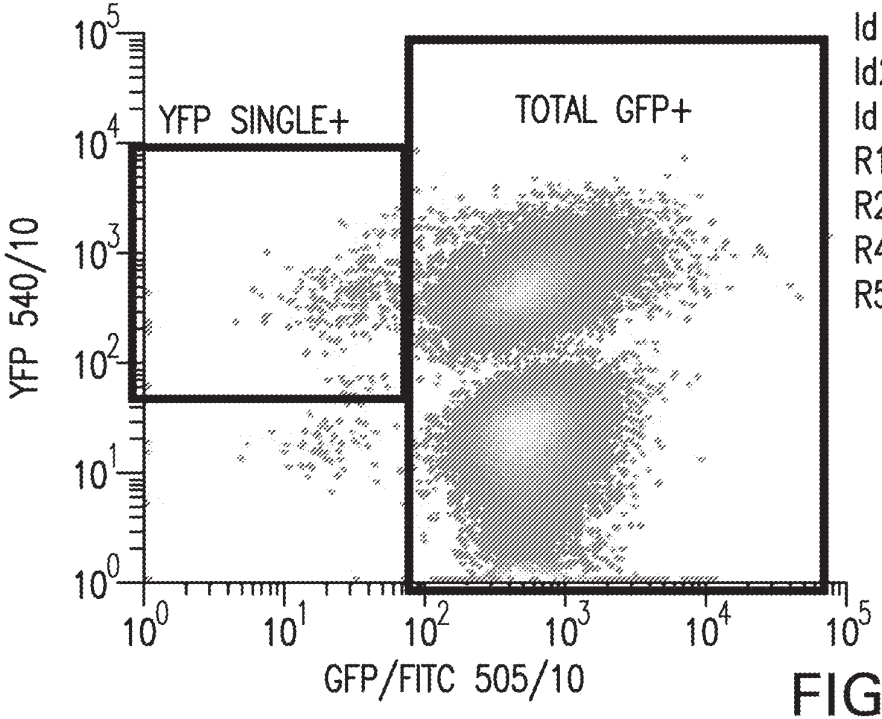
Id1: 005
Id2: 14 Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	R1	50000	50000	28315	56.63	56.63
R2	R2	50000	28315	26134	52.27	92.30
R4	YFP SINGLE+	50000	26134	25696	51.39	98.32
R5	TOTAL GFP+	50000	26134	354	0.71	1.35

No Hyg selection

FIG.4A

Selection efficiency with Hygromycin



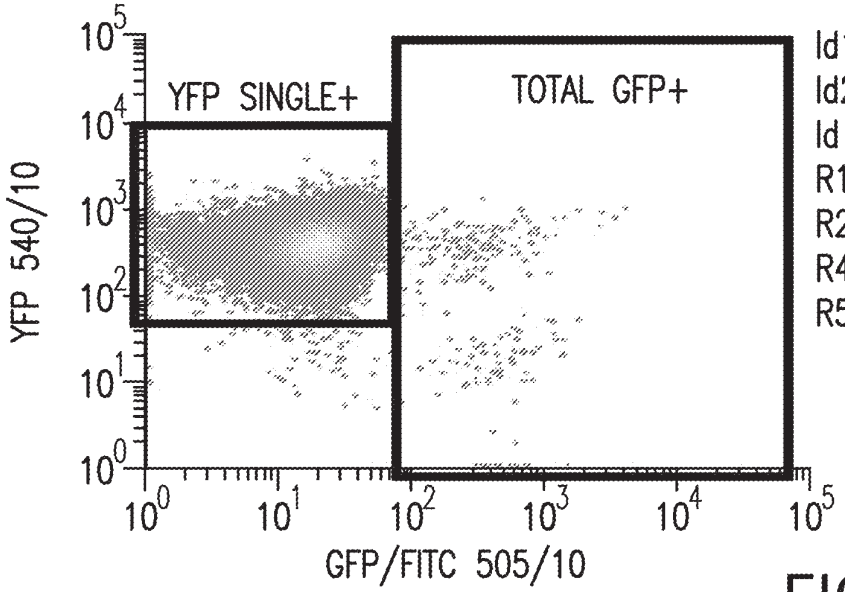
Id1: 006
Id2: 14 Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	R1	50000	50000	33318	66.64	66.64
R2	R2	50000	33318	29446	58.89	88.38
R4	YFP SINGLE+	50000	29446	263	0.53	0.89
R5	TOTAL GFP+	50000	29446	29100	58.20	98.82

400 μg/ml selection

FIG.4B

Selection efficiency with Tn and GPT
as a selectable marker



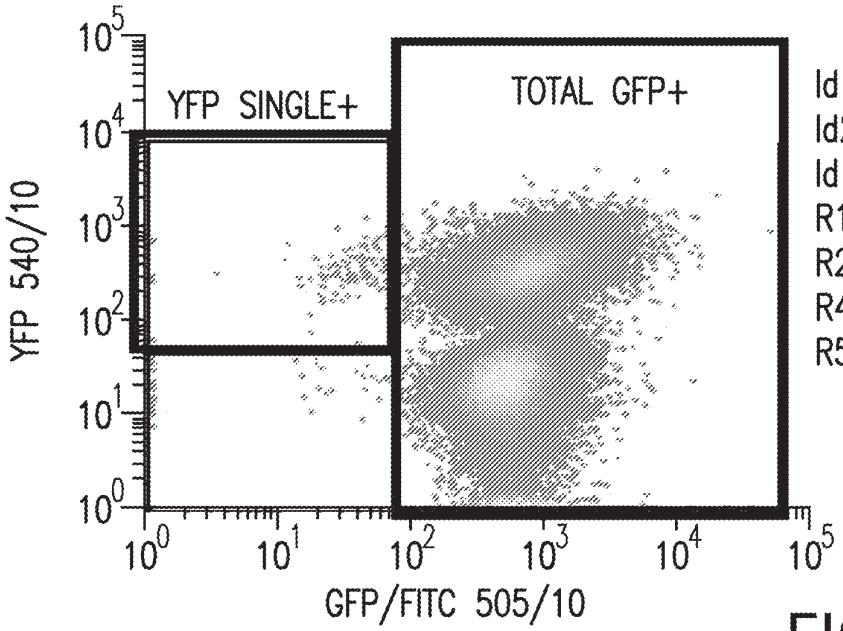
Id1: 008
Id2: 14 Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	R1	41183	41183	24495	59.48	59.48
R2	R2	41183	24495	24494	59.48	100.00
R4	YFP SINGLE+	41183	24494	24199	58.76	98.80
R5	TOTAL GFP+	41183	24494	217	0.53	0.89

No Tn selection;
CHO–GPT marker

FIG.5A

Selection efficiency with Tn and GPT
as a selectable marker



Id1: 009
Id2: 14 Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	R1	44227	44227	32032	72.43	72.43
R2	R2	44227	32032	32015	72.39	99.95
R4	YFP SINGLE+	44227	32015	114	0.26	0.36
R5	TOTAL GFP+	44227	32015	27823	62.91	86.91

1 μg/ml Tn selection;
CHO-GPT marker

FIG.5B

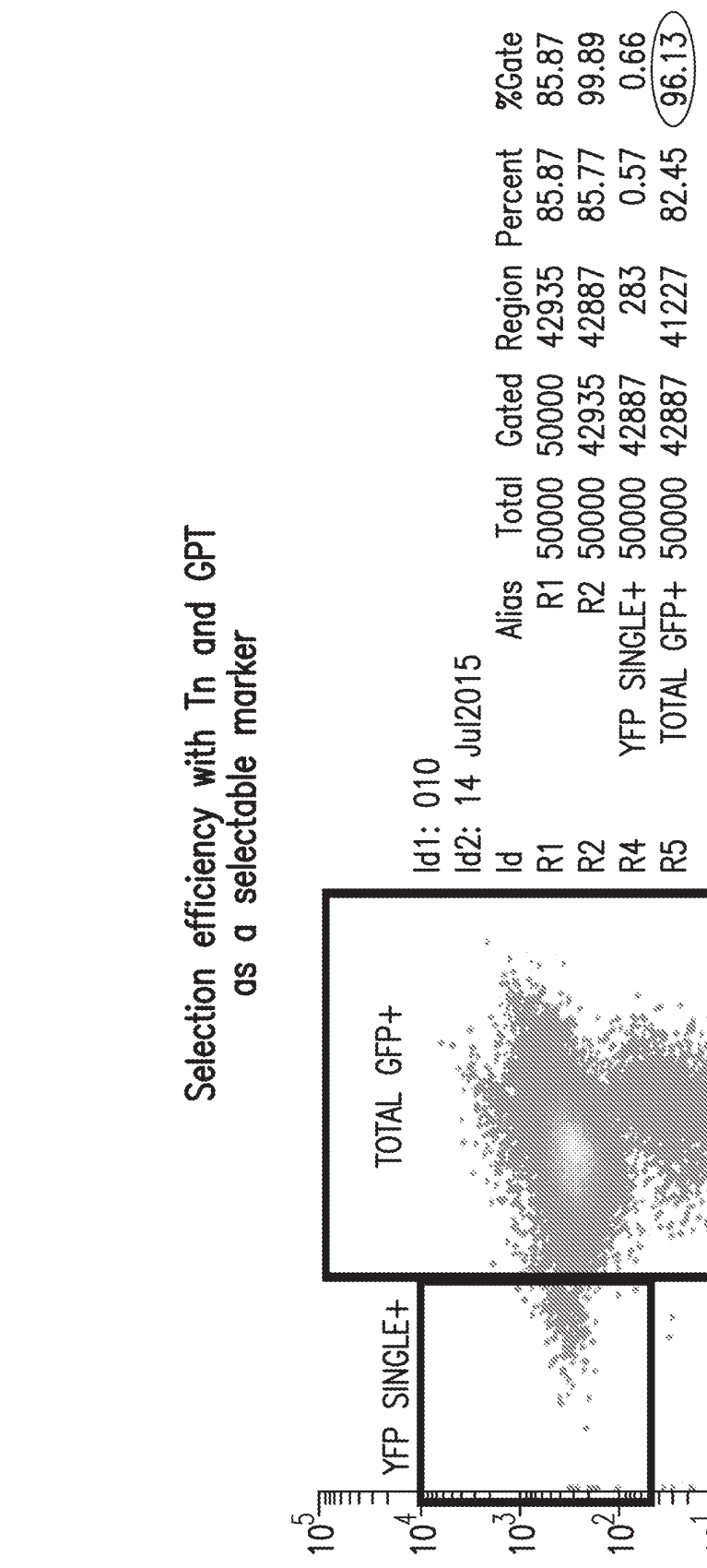
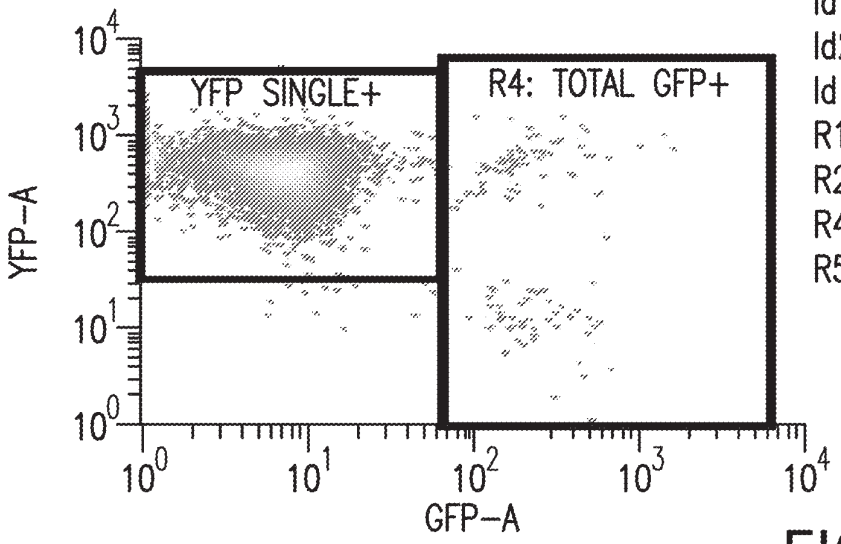

Selection efficiency with Tn and GPT
as a selectable marker
Id1: 010
Id2: 14 Jul2015
Id Alias Total Gated Region Percent %Gate
R1 R1 50000 50000 42935 85.87 85.87
R2 R2 50000 42935 42887 85.77 99.89
R4 YFP SINGLE+ 50000 42887 283 0.57 0.66
R5 TOTAL GFP+ 50000 42887 41227 82.45 96.13
2.5 μg/ml Tn selection;
CHO-GPT marker
TOTAL GFP+
YFP SINGLE+
YFP 540/10
GFP/FITC 505/10

FIG.5C

Selection efficiency with Tn and GPT
as a selectable marker



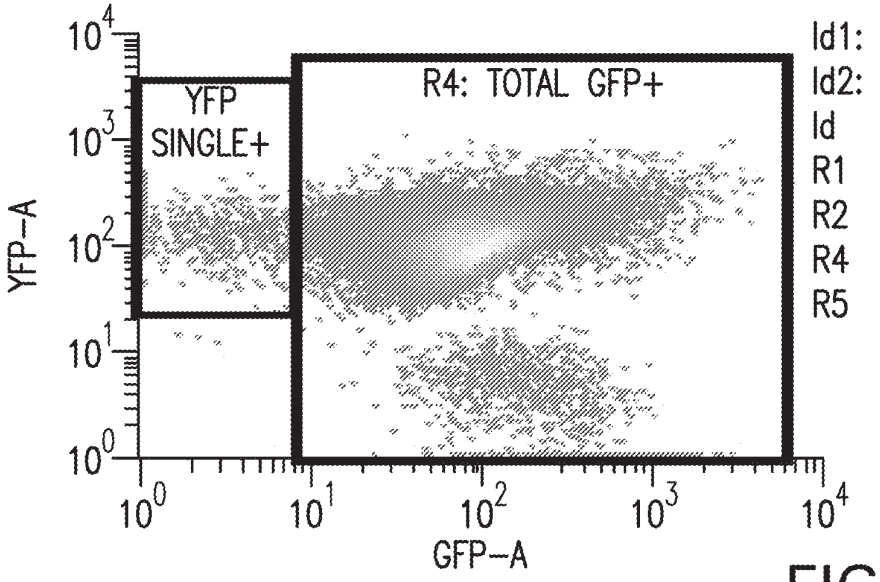
Id1: 005
Id2: 13 Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	10.63%	50000	50000	5315	10.63	10.63
R2	90.72%	50000	5315	4822	9.64	90.72
R4	TOTAL GFP+	50000	4822	126	0.25	2.61
R5	YFP SINGLE+	50000	4822	4680	9.36	97.06

No Tn selection;
Human-GPT marker

FIG.5D

Selection efficiency with Tn and GPT
as a selectable marker



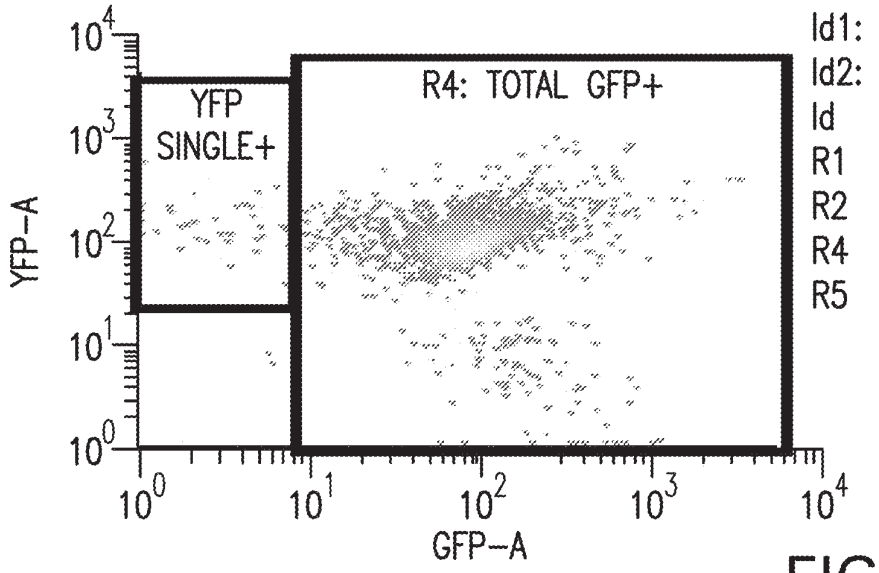
Id1: 006
Id2: 13Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	59.32%	31256	31256	18542	59.32	59.32
R2	97.62%	31256	18542	18101	57.91	97.62
R4	TOTAL GFP+	31256	18101	17558	56.17	97.00
R5	YFP SINGLE+	31256	18101	526	1.68	2.91

1 μg/ml Tn selection;
Human-GPT marker

FIG.5E

Selection efficiency with Tn and GPT
as a selectable marker



Id1: 007
Id2: 13Jul2015

Id	Alias	Total	Gated	Region	Percent	%Gate
R1	2.48%	50000	50000	1241	2.48	2.48
R2	98.87	50000	1241	1227	2.45	98.87
R4	TOTAL GFP+	50000	1227	1187	2.37	96.74
R5	YFP SINGLE+	50000	1227	35	0.07	2.85

2.5 μg/ml Tn selection;
Human-GPT marker

FIG.5F

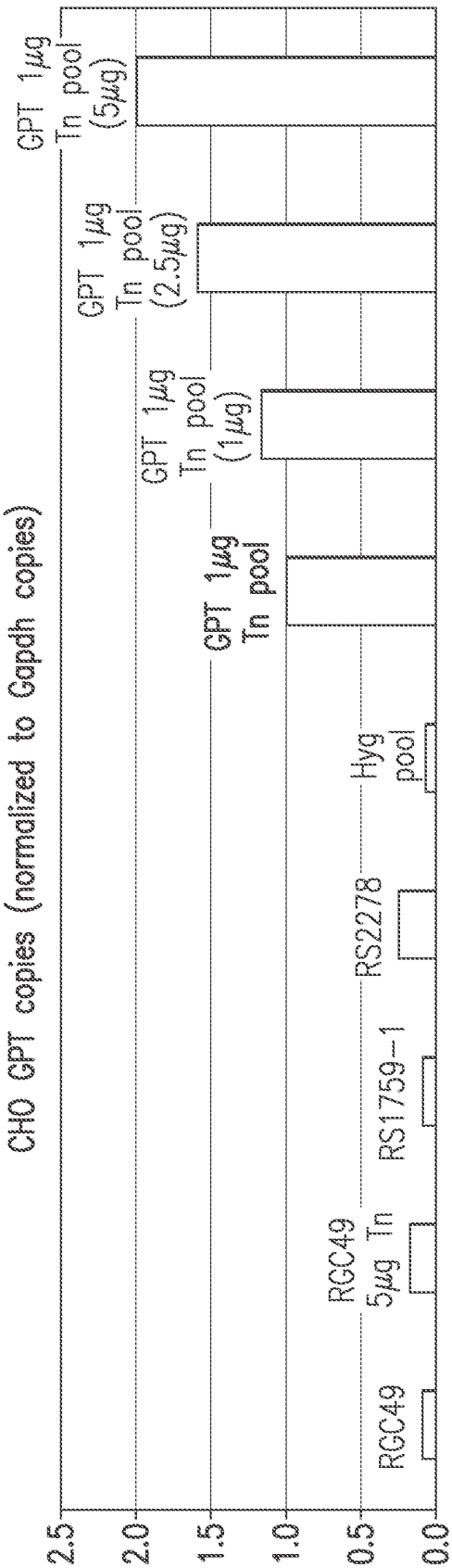

CHO GPT copies (normalized to Gapdh copies)
2.5
2.0
1.5
1.0
0.5
0.0
RGC49
RGC49
5μg Tn
RS1759−1
RS2278
Hyg pool
GPT 1μg Tn pool
GPT 1μg Tn pool (1μg)
GPT 1μg Tn pool (2.5μg)
GPT 1μg Tn pool (5μg)

FIG.6A

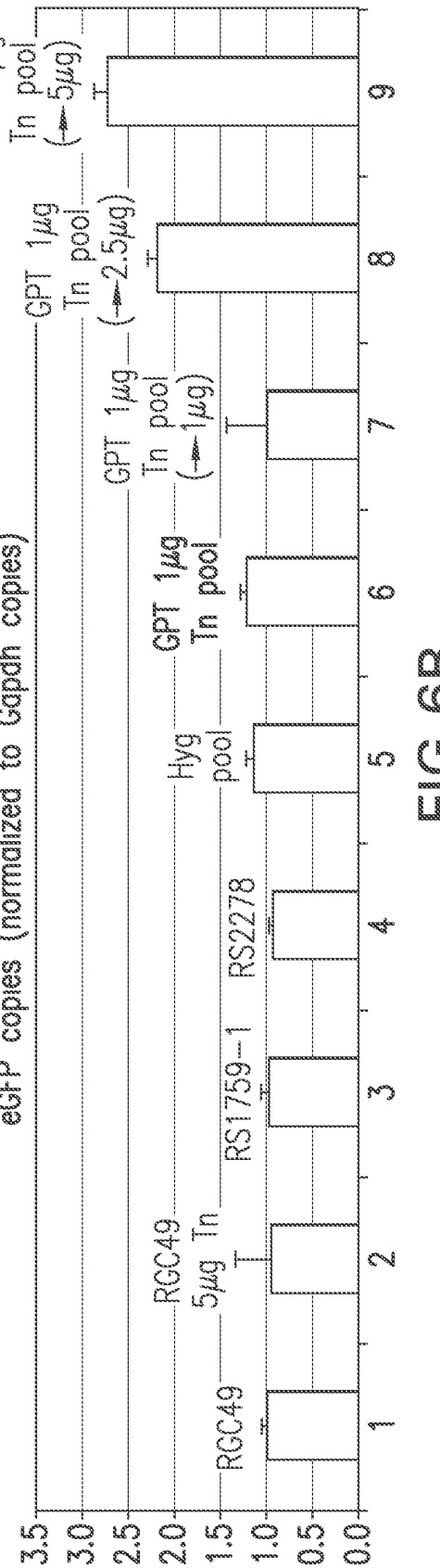

eGFP copies (normalized to Gapdh copies)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1
2
3
4
5
6
7
8
9
RGC49
RGC49
5μg Tn
RS1759−1
RS2278
Hyg pool
GPT 1μg Tn pool
GPT 1μg Tn pool (1μg)
GPT 1μg Tn pool (2.5μg)
GPT 1μg Tn pool (5μg)

FIG.6B

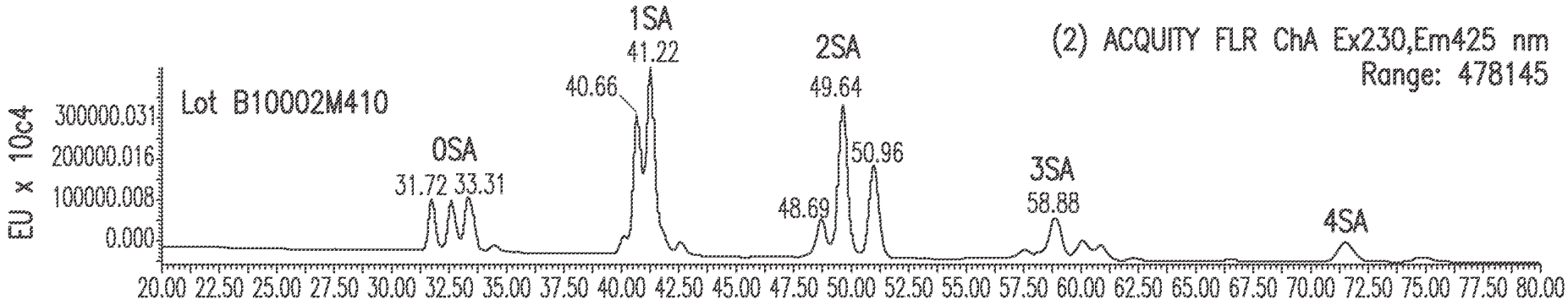

(2) ACQUITY FLR ChA Ex230,Em425 nm
Range: 478145
Lot B10002M410
EU x 10c4
300000.031
200000.016
100000.008
0.000
0SA
31.72 33.31
1SA
41.22
40.66
2SA
49.64
48.69
50.96
3SA
58.88
4SA
20.00 22.50 25.00 27.50 30.00 32.50 35.00 37.50 40.00 42.50 45.00 47.50 50.00 52.50 55.00 57.50 60.00 62.50 65.00 67.50 70.00 72.50 75.00 77.50 80.00

FIG.7A

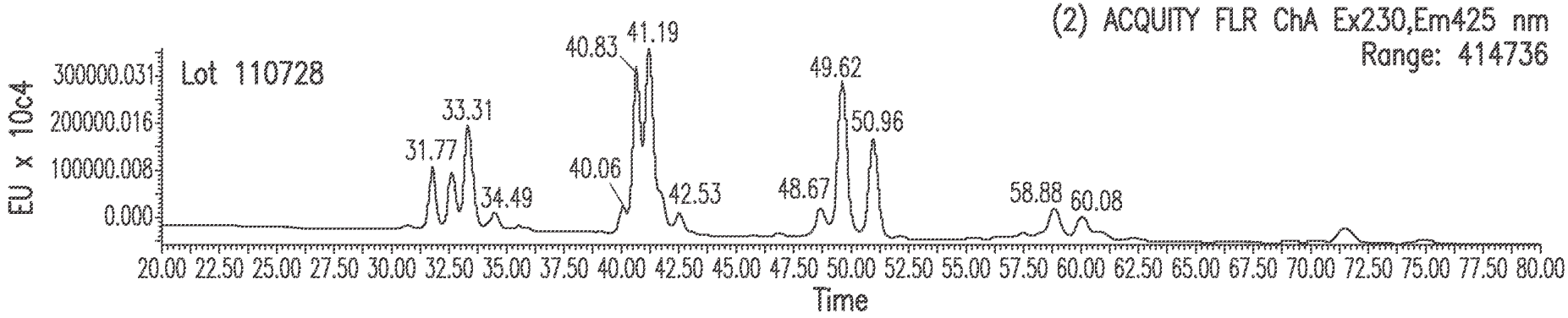

(2) ACQUITY FLR ChA Ex230,Em425 nm
Range: 414736
Lot 110728
EU x 10c4
300000.031
200000.016
100000.008
0.000
31.77
33.31
34.49
40.06
40.83
41.19
42.53
48.67
49.62
50.96
58.88
60.08
20.00 22.50 25.00 27.50 30.00 32.50 35.00 37.50 40.00 42.50 45.00 47.50 50.00 52.50 55.00 57.50 60.00 62.50 65.00 67.50 70.00 72.50 75.00 77.50 80.00
Time

FIG.7B

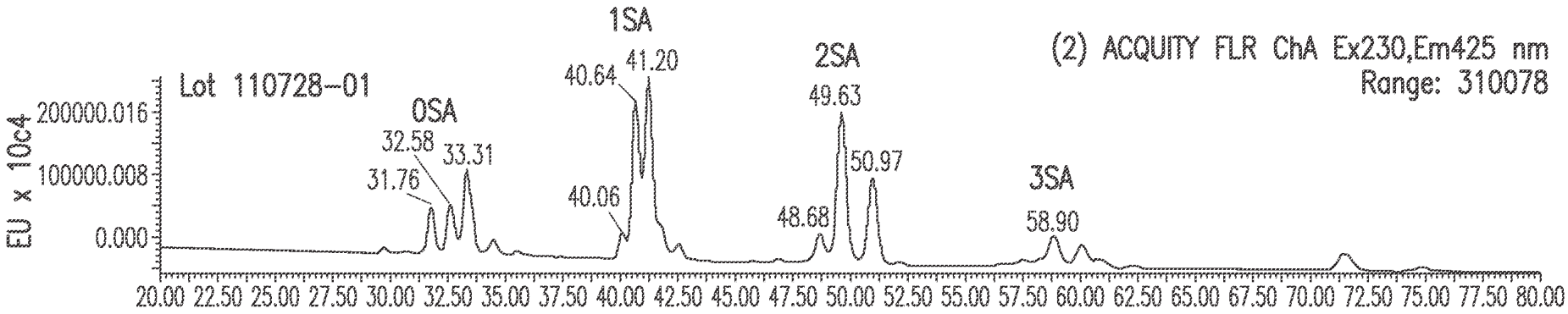

Lot 110728-01
(2) ACQUITY FLR ChA Ex230,Em425 nm
Range: 310078
EU x 10c4
200000.016
100000.008
0.000
0SA
1SA
2SA
3SA
31.76
32.58
33.31
40.06
40.64
41.20
48.68
49.63
50.97
58.90
20.00 22.50 25.00 27.50 30.00 32.50 35.00 37.50 40.00 42.50 45.00 47.50 50.00 52.50 55.00 57.50 60.00 62.50 65.00 67.50 70.00 72.50 75.00 77.50 80.00

FIG.7C

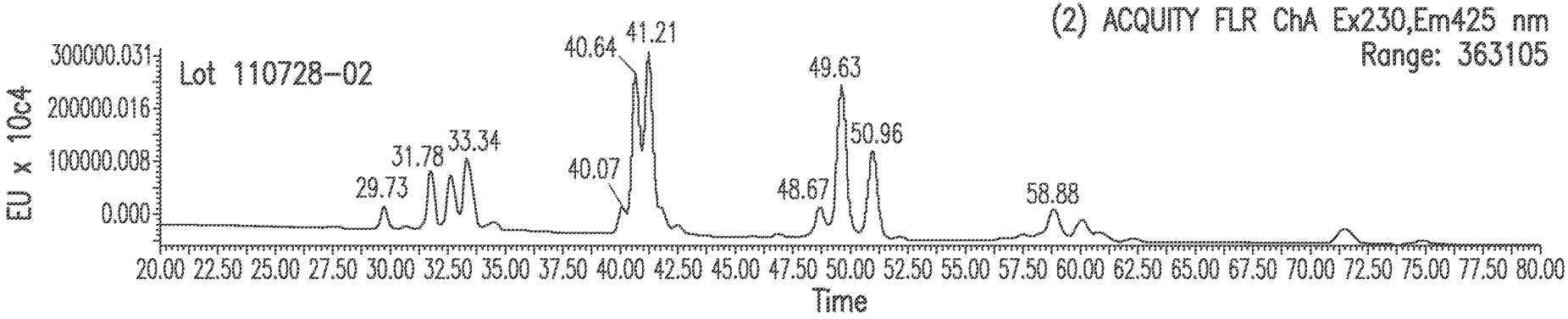

Lot 110728-02
(2) ACQUITY FLR ChA Ex230,Em425 nm
Range: 363105
EU x 10c4
300000.031
200000.016
100000.008
0.000
29.73
31.78
33.34
40.07
40.64
41.21
48.67
49.63
50.96
58.88
20.00 22.50 25.00 27.50 30.00 32.50 35.00 37.50 40.00 42.50 45.00 47.50 50.00 52.50 55.00 57.50 60.00 62.50 65.00 67.50 70.00 72.50 75.00 77.50 80.00
Time

FIG.7D

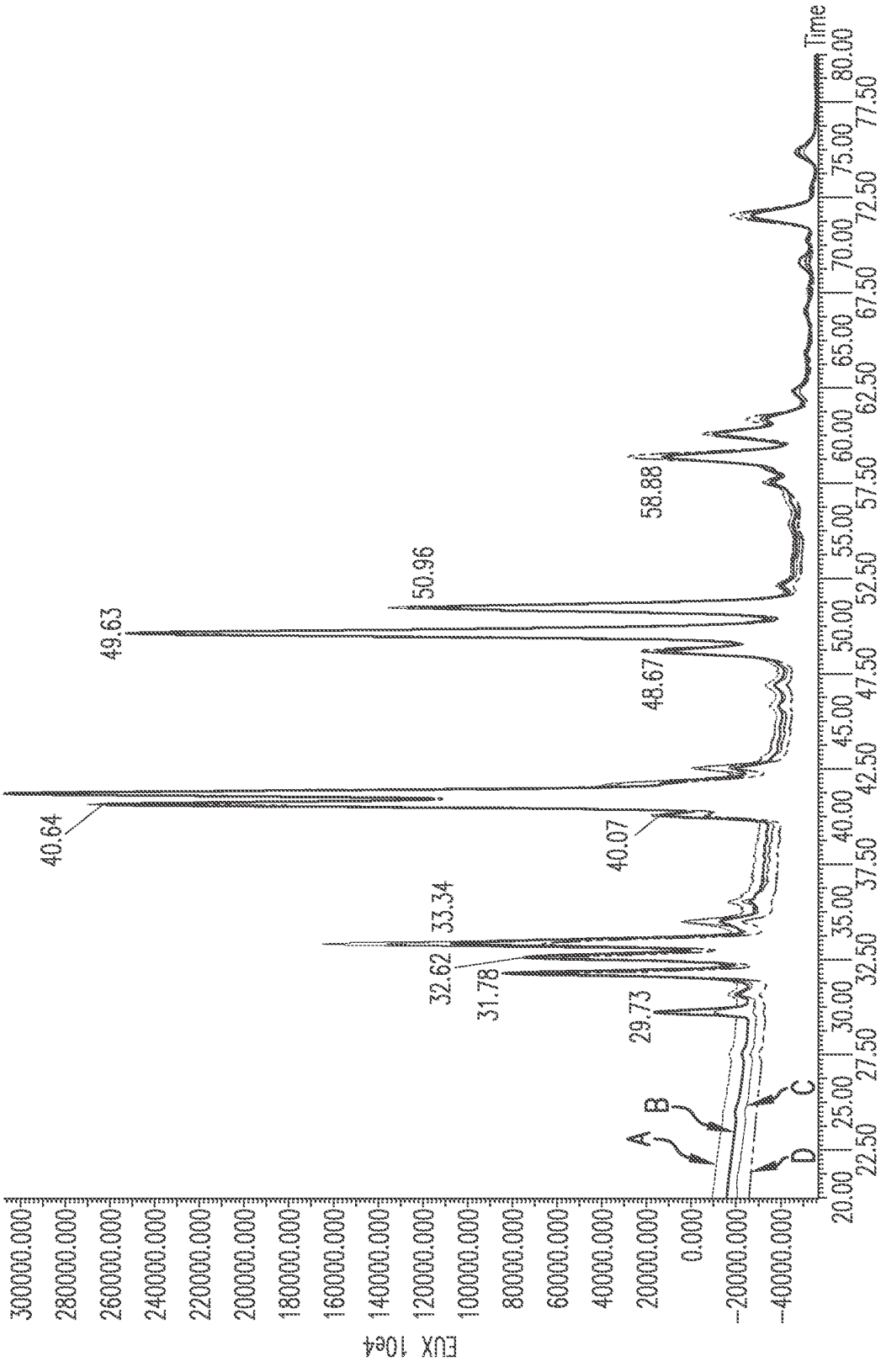

EUX 10e4
Time
41.21
40.64
49.63
50.96
58.88
48.67
40.07
33.34
32.62
31.78
29.73
A
B
C
D

FIG.8