

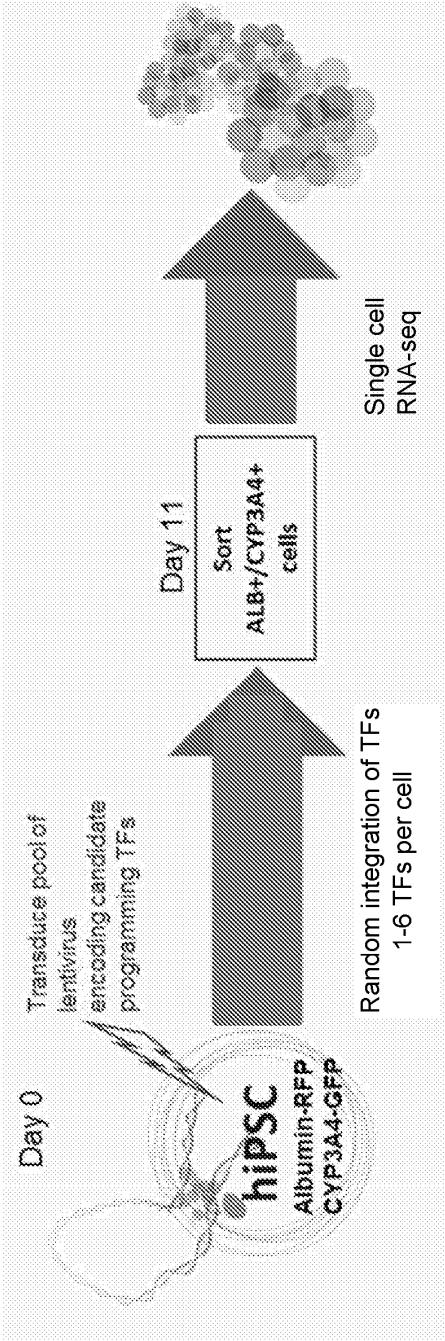


FIGURE 1

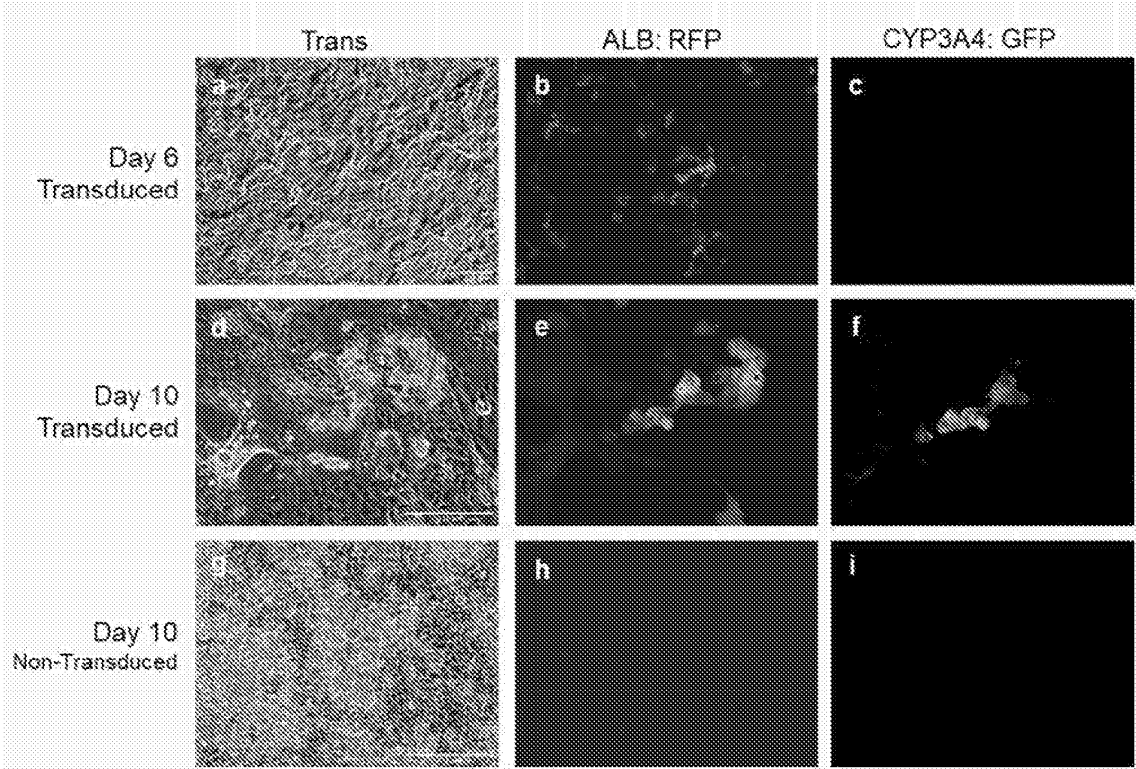


FIGURE 2

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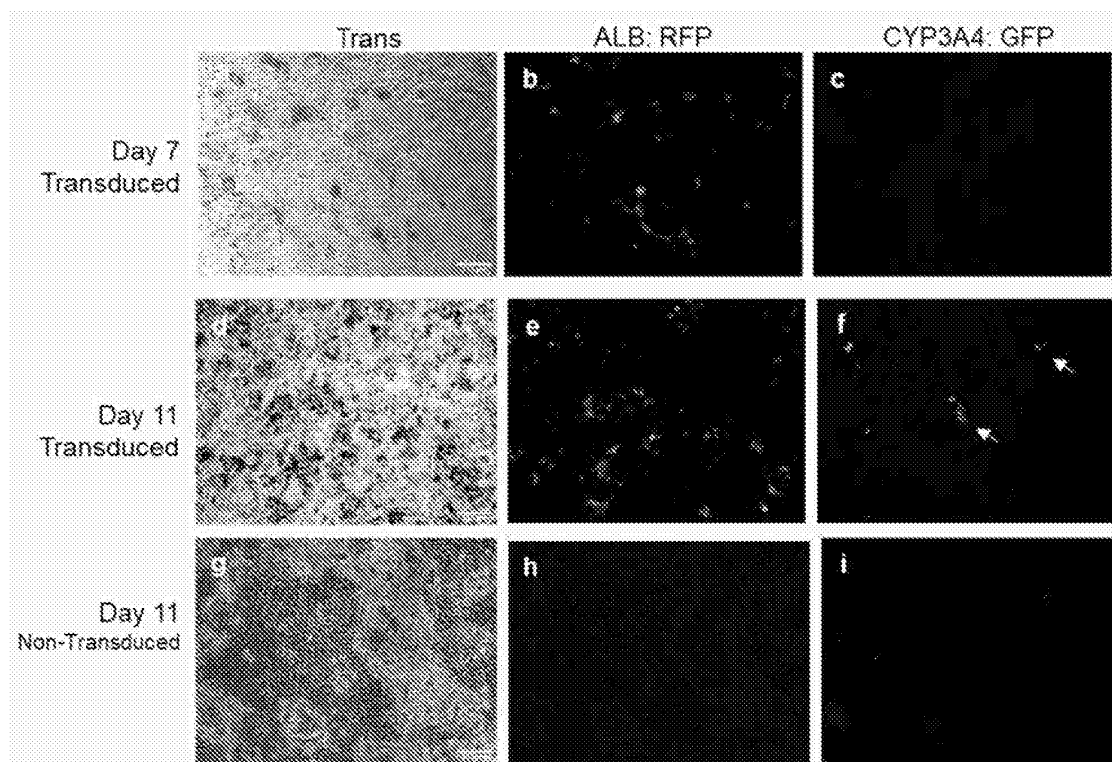
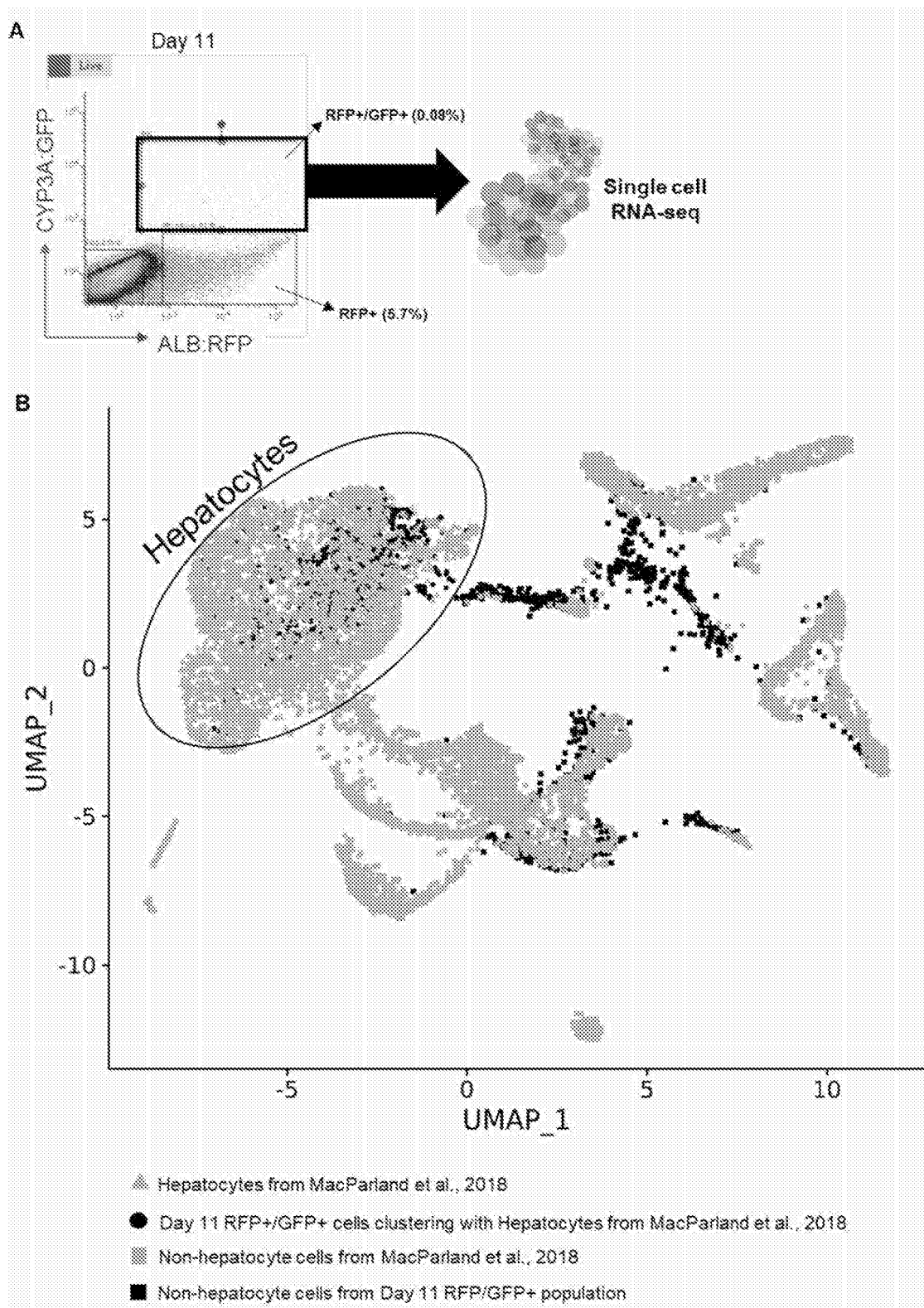


FIGURE 3

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**FIGURE 4**

SUBSTITUTE SHEET (RULE 26)

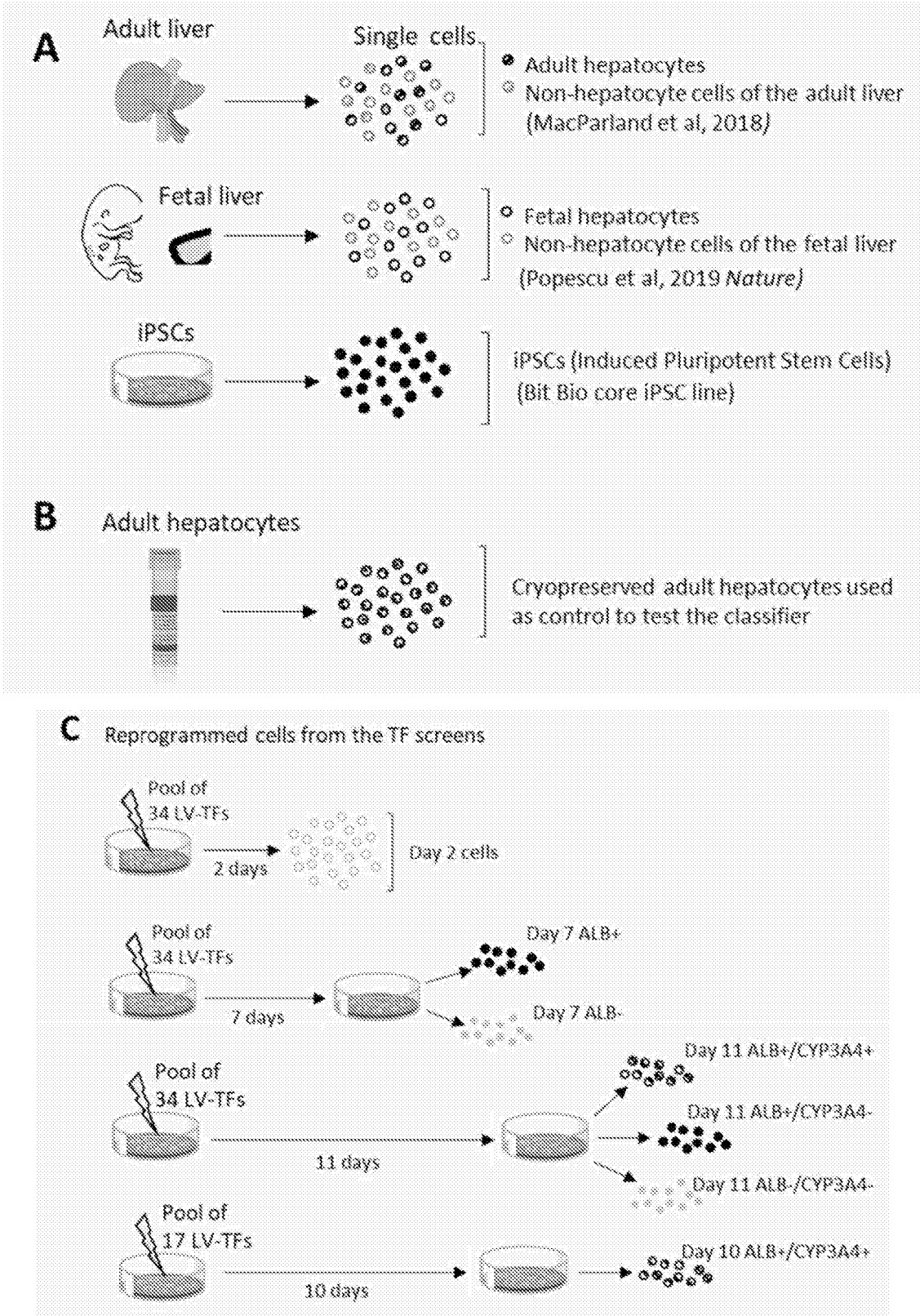
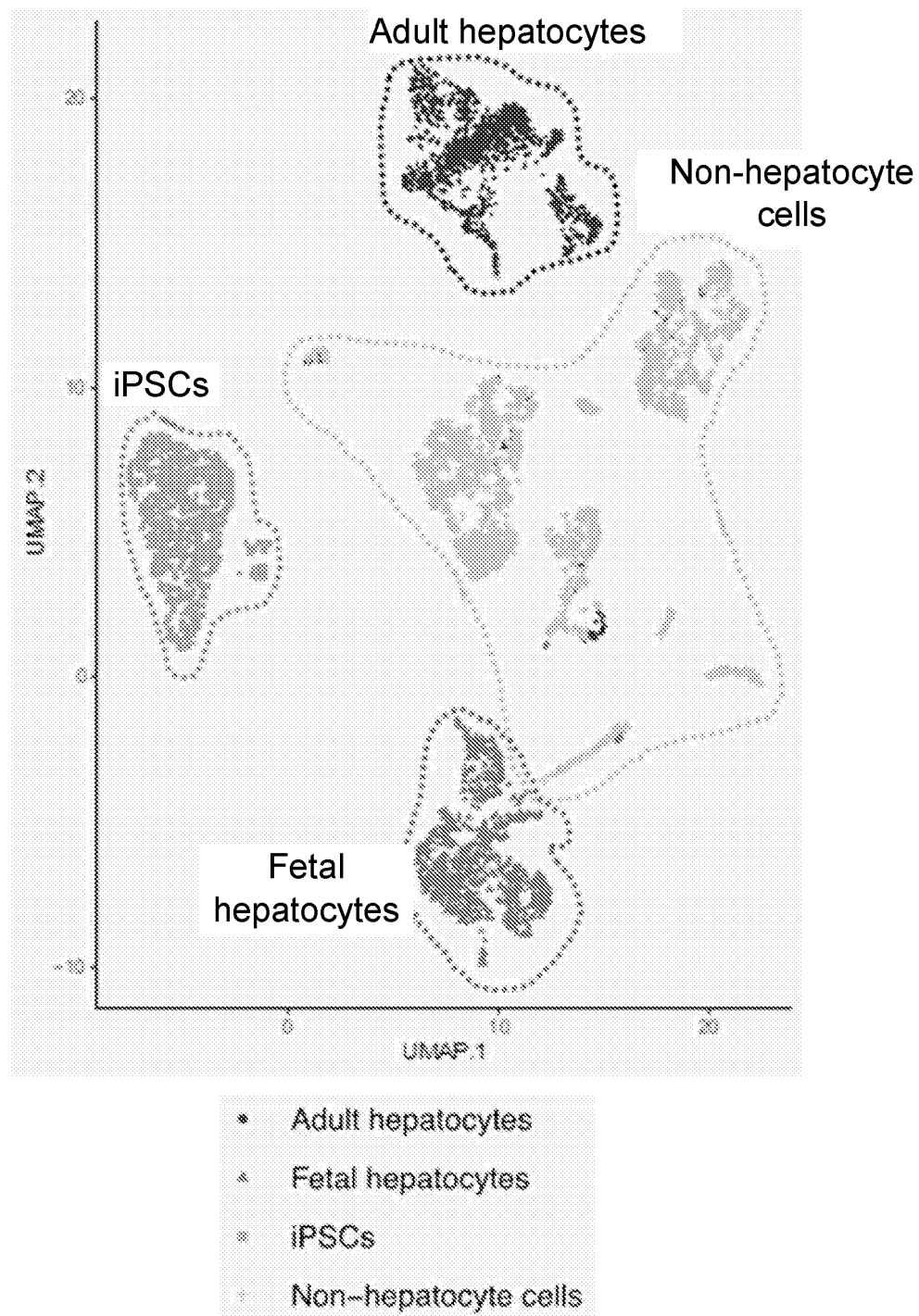


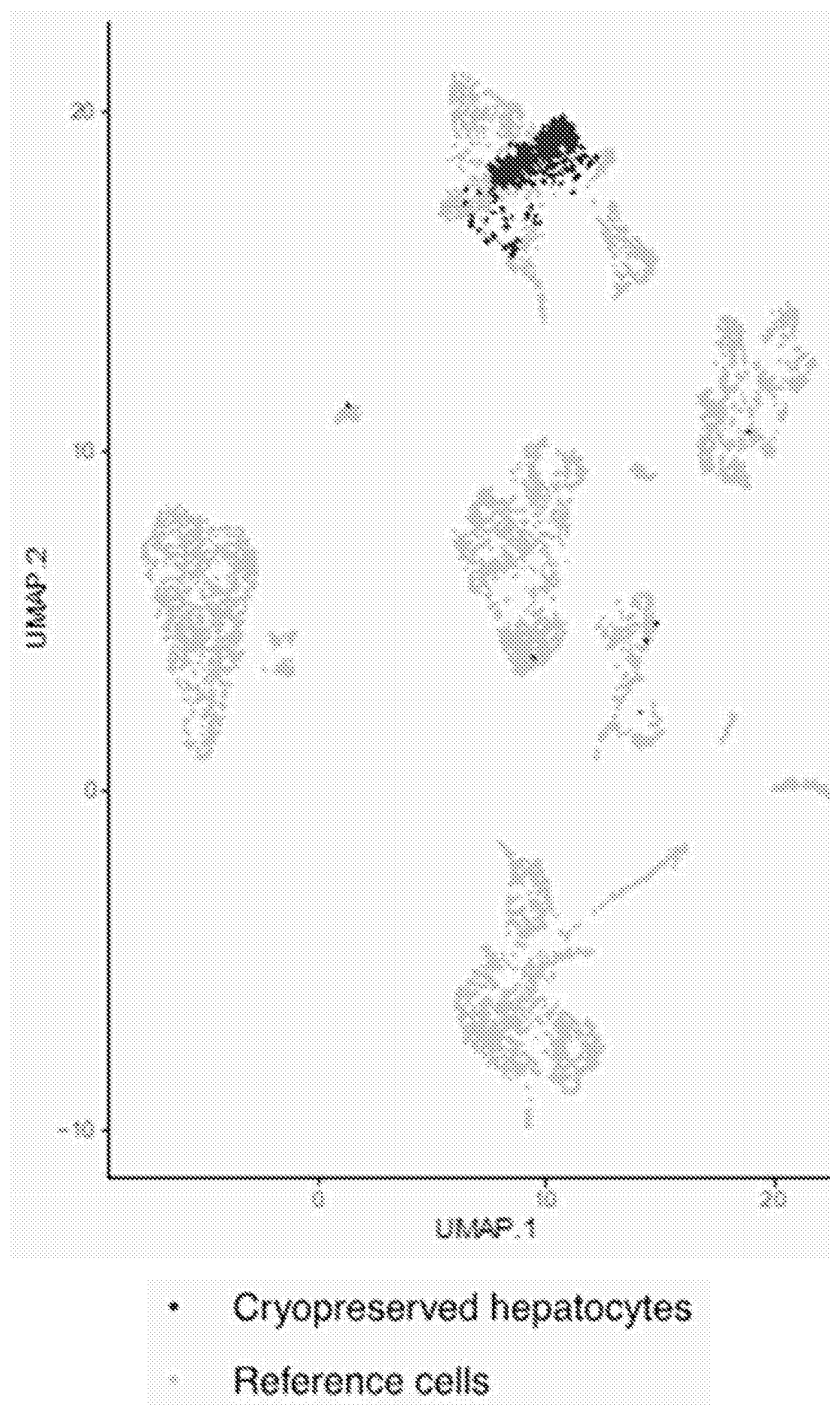
FIGURE 5

SUBSTITUTE SHEET (RULE 26)

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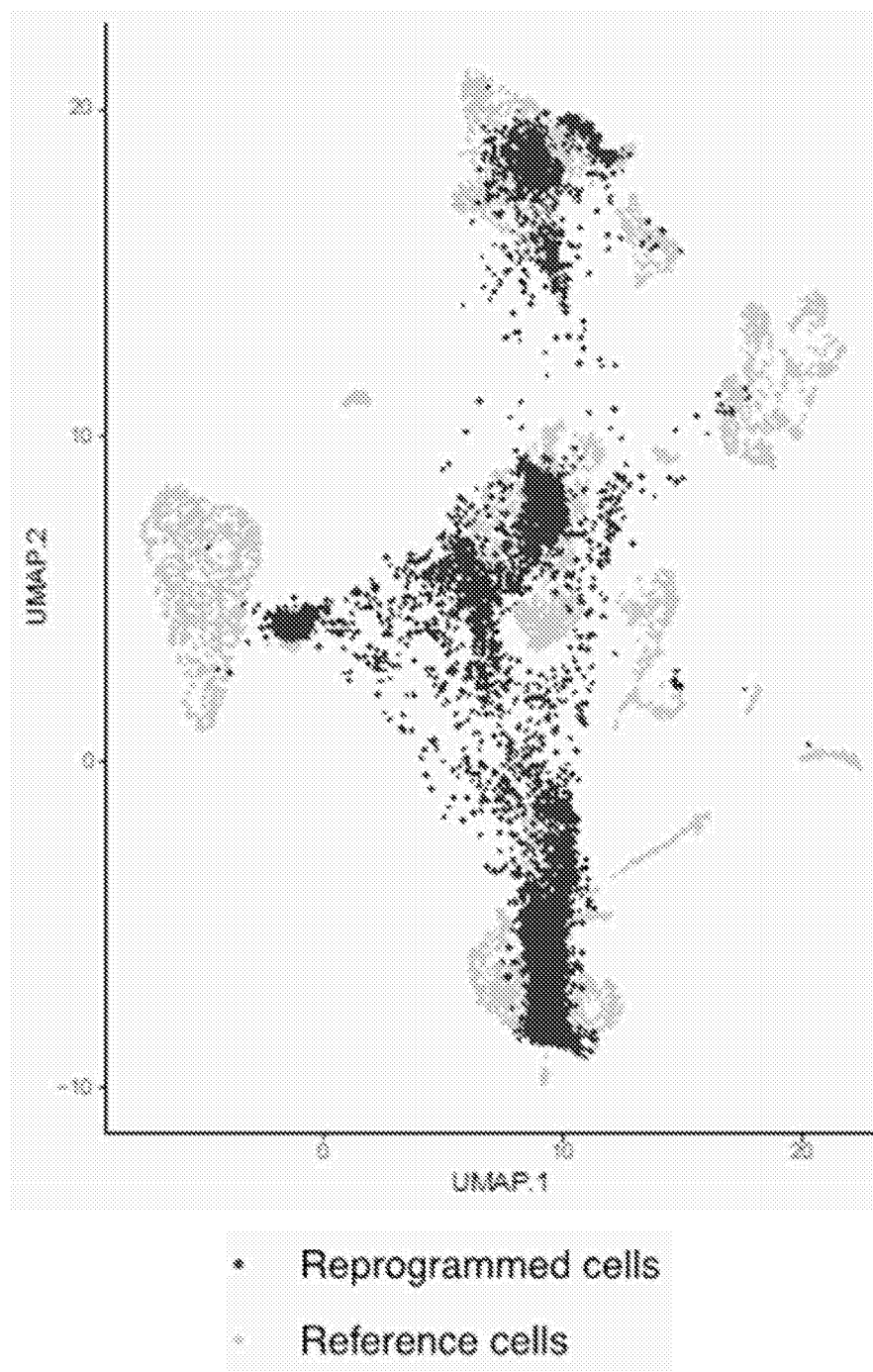
A**FIGURE 6**

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B**FIGURE 6** (continued)

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C

**FIGURE 6** (continued)

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D

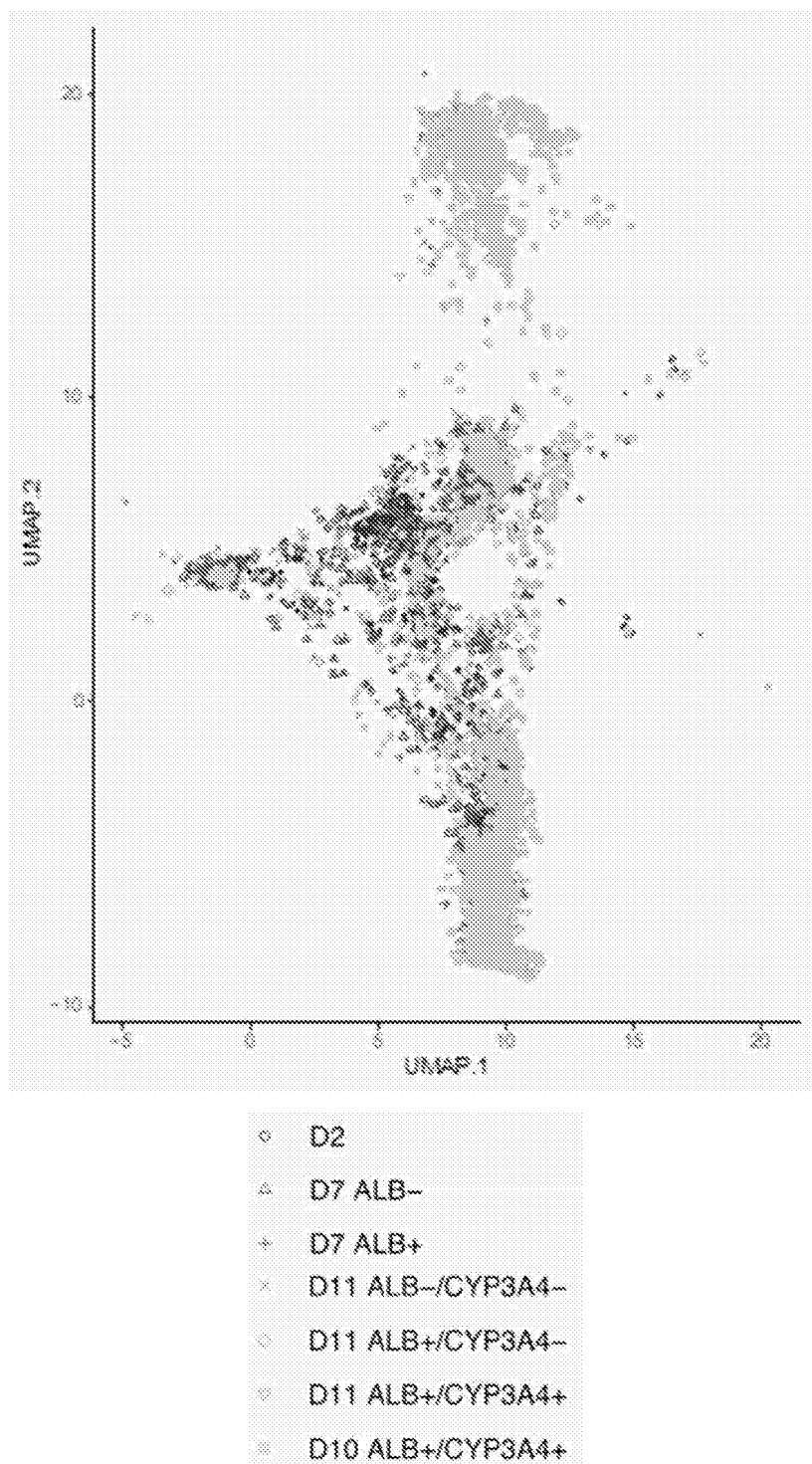


FIGURE 6 (continued)
SUBSTITUTE SHEET (RULE 26)

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E

Bit Bio reprogrammed cells	iPSC	Non-Hepatocyte	Fetal Hepatocyte	Adult Hepatocyte
Day 2	18.42	73.58	7.23	0.76
Day 7 ALB-	32.25	22.63	23.30	0.02
Day 7 ALB+	1.95	1.69	72.50	1.77
Day 11 ALB-/CYP3A4-	31.77	62.23	5.89	0.14
Day 11 ALB+/CYP3A4-	4.48	50.28	40.71	4.52
Day 11 ALB+/CYP3A4+	1.07	9.93	75.59	13.41
Day 10 ALB+/CYP3A4+	0.85	7.67	69.41	22.08

FIGURE 6 (continued)

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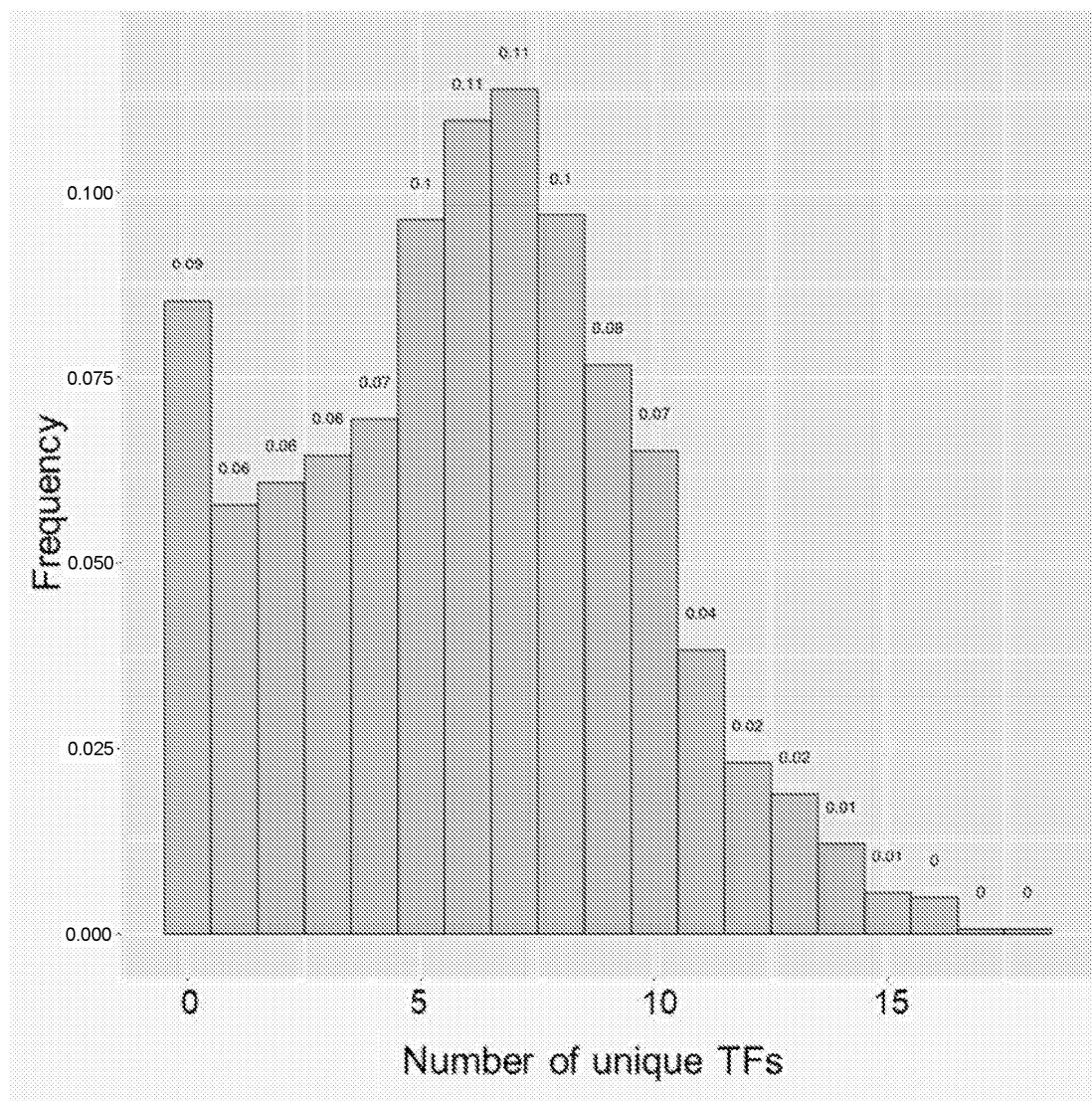


FIGURE 7

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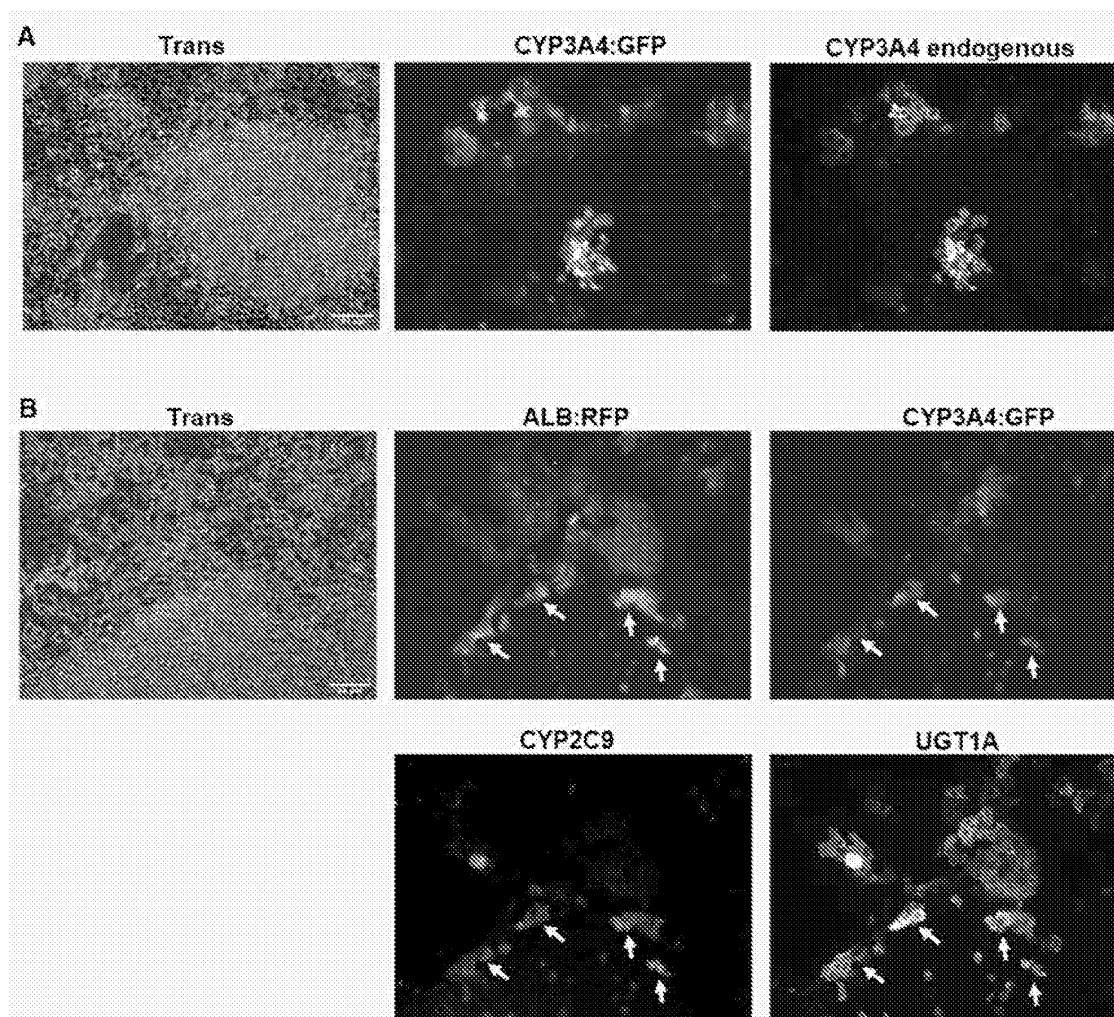


FIGURE 8

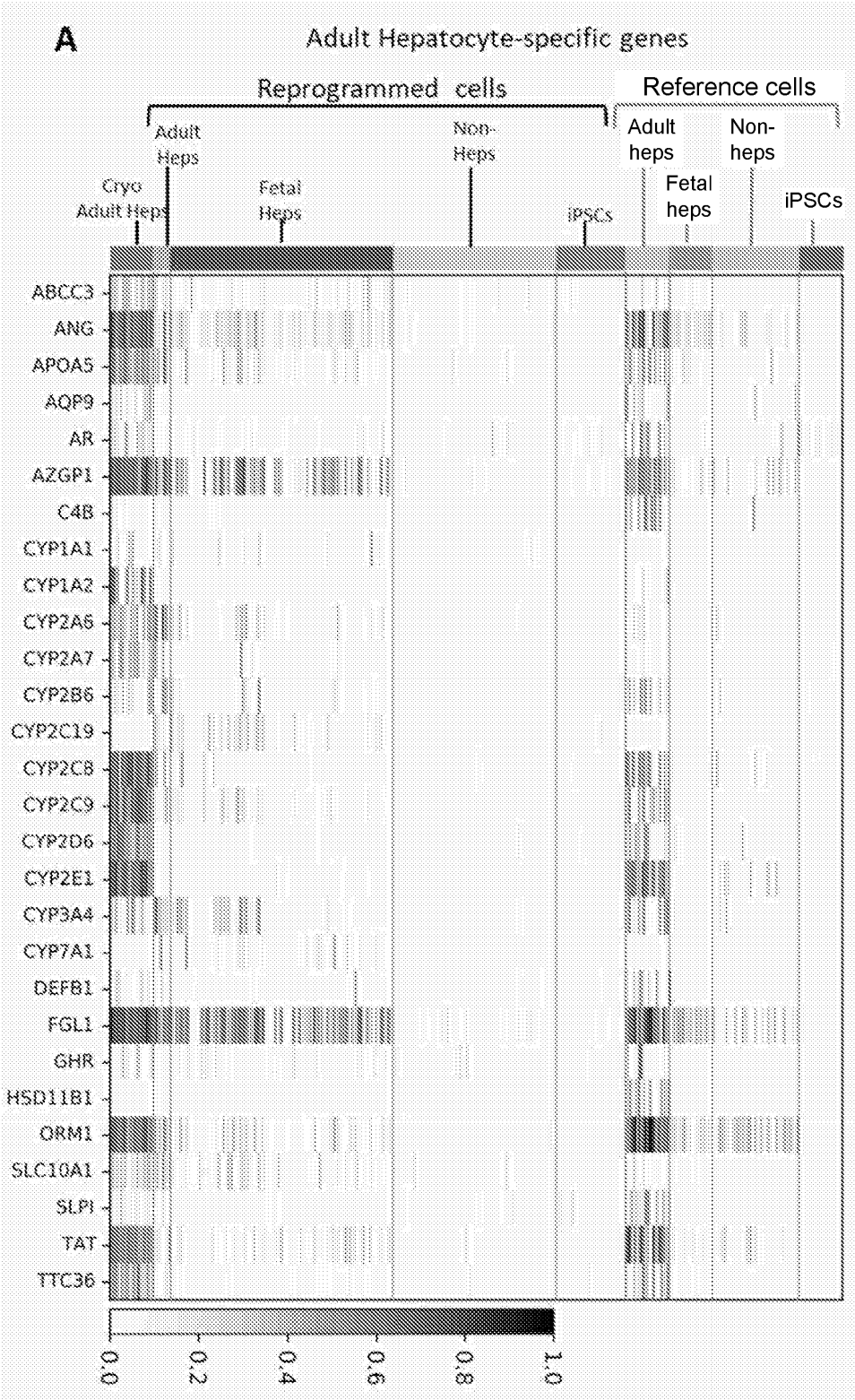


FIGURE 9

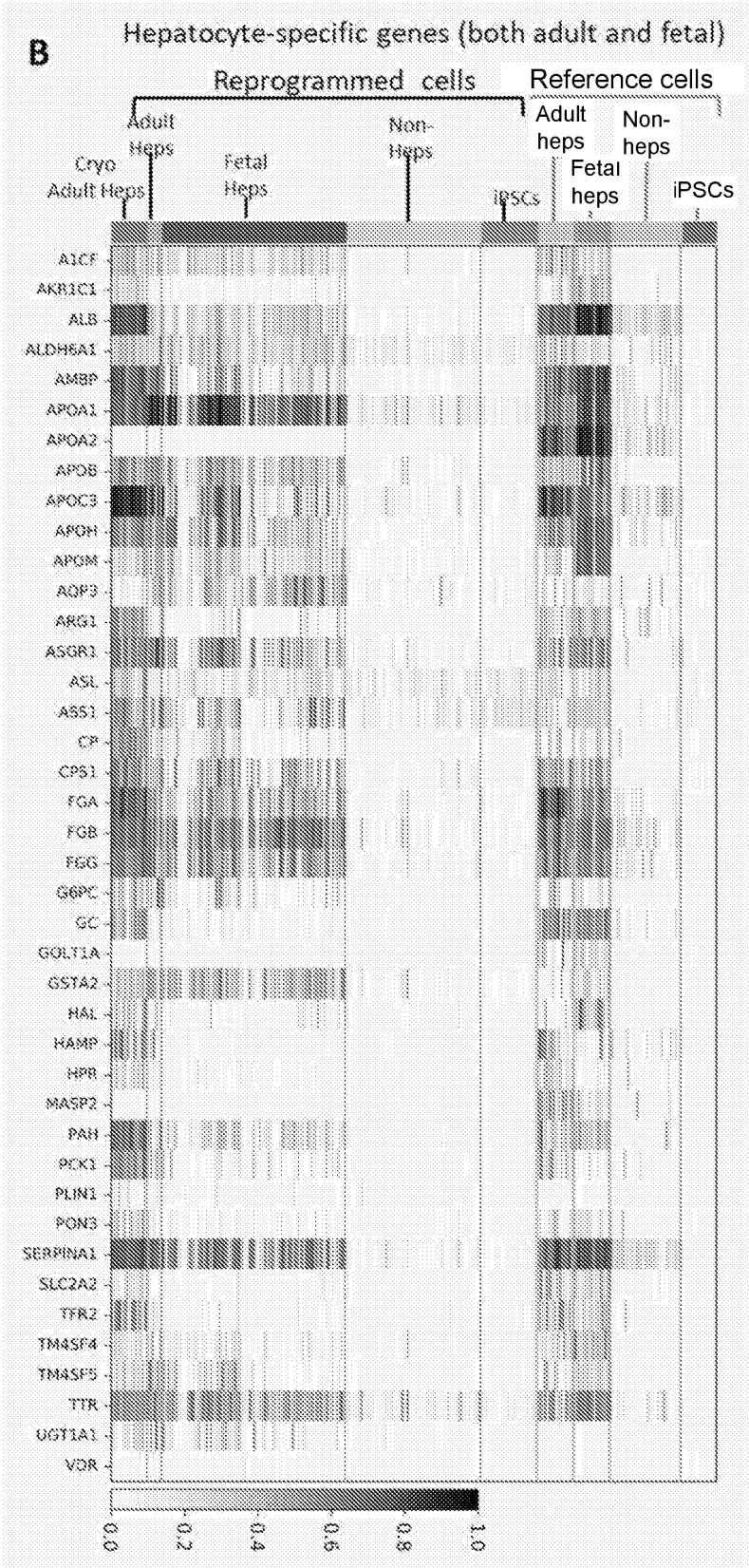


FIGURE 9 (continued)
SUBSTITUTE SHEET (RULE 26)

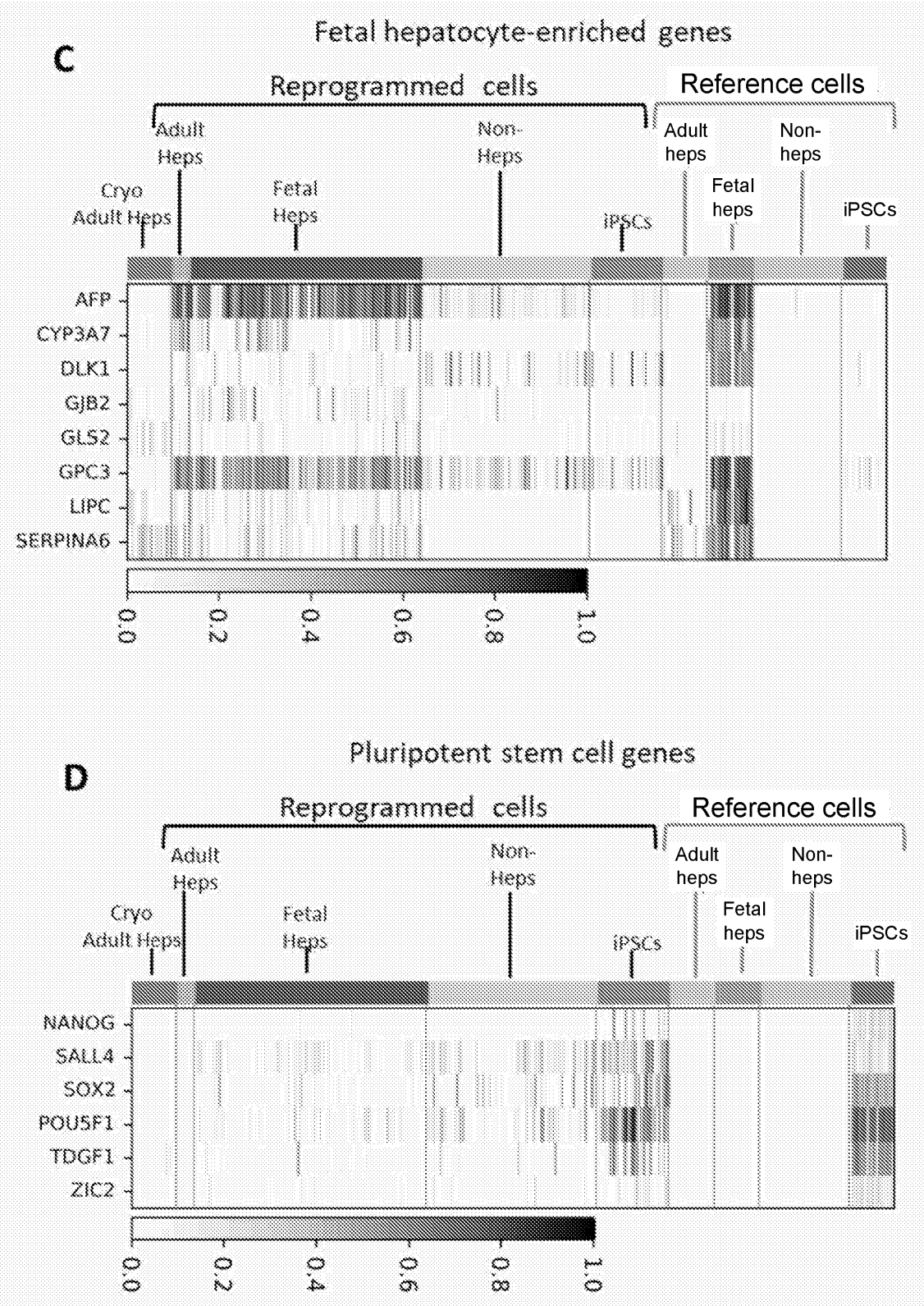


FIGURE 9 (continued)

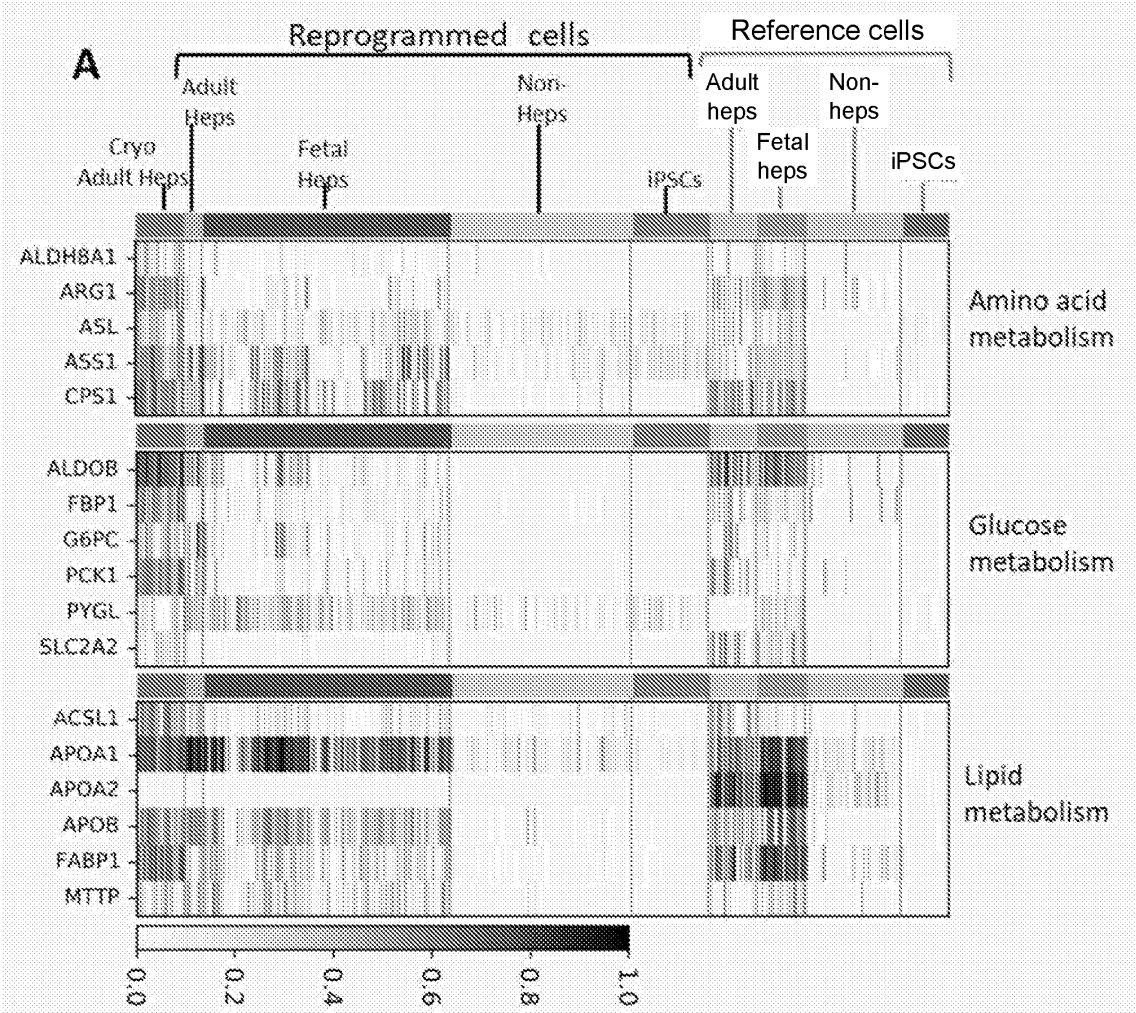


FIGURE 10

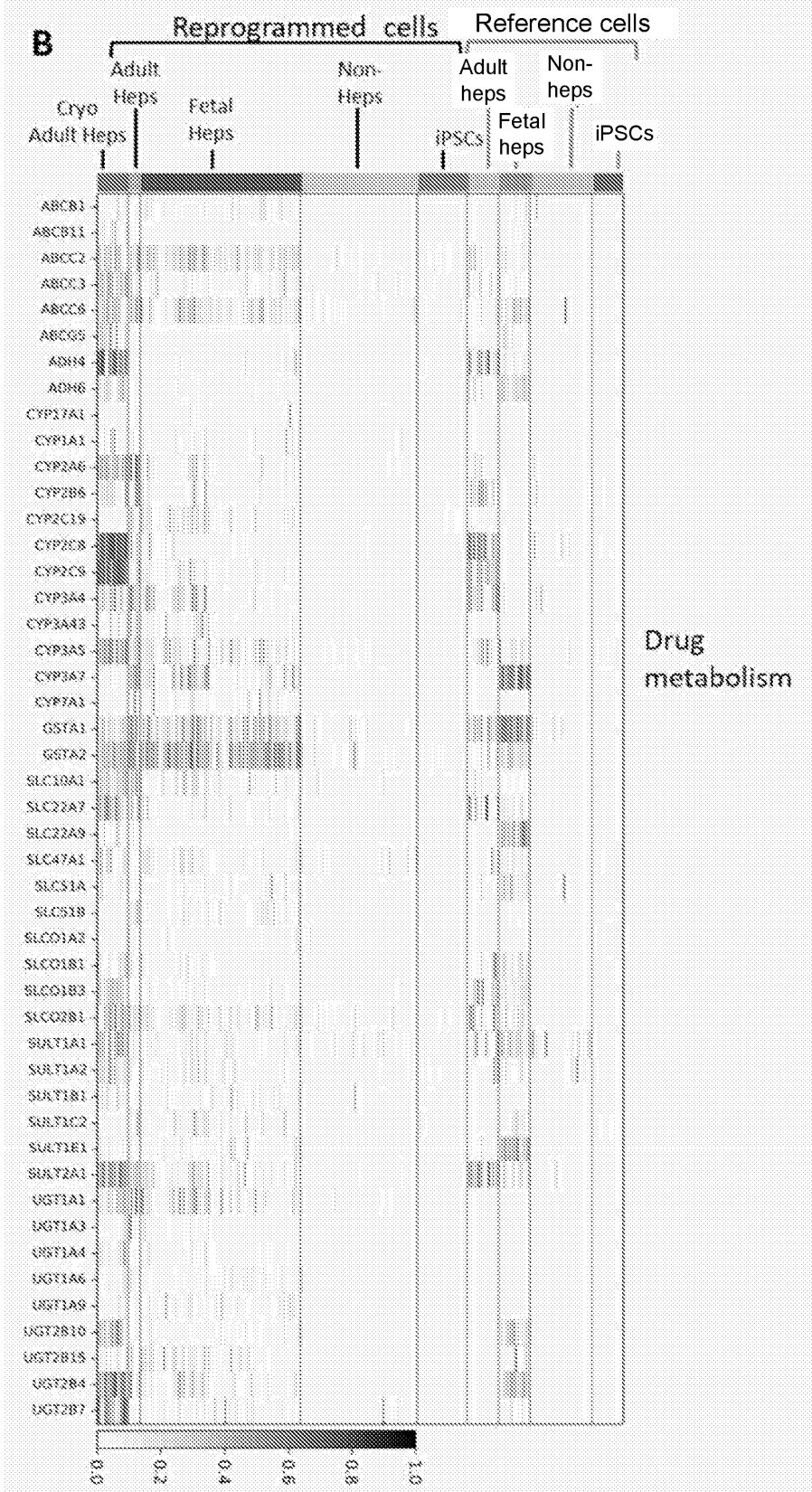


FIGURE 10 (continued)
SUBSTITUTE SHEET (RULE 26)

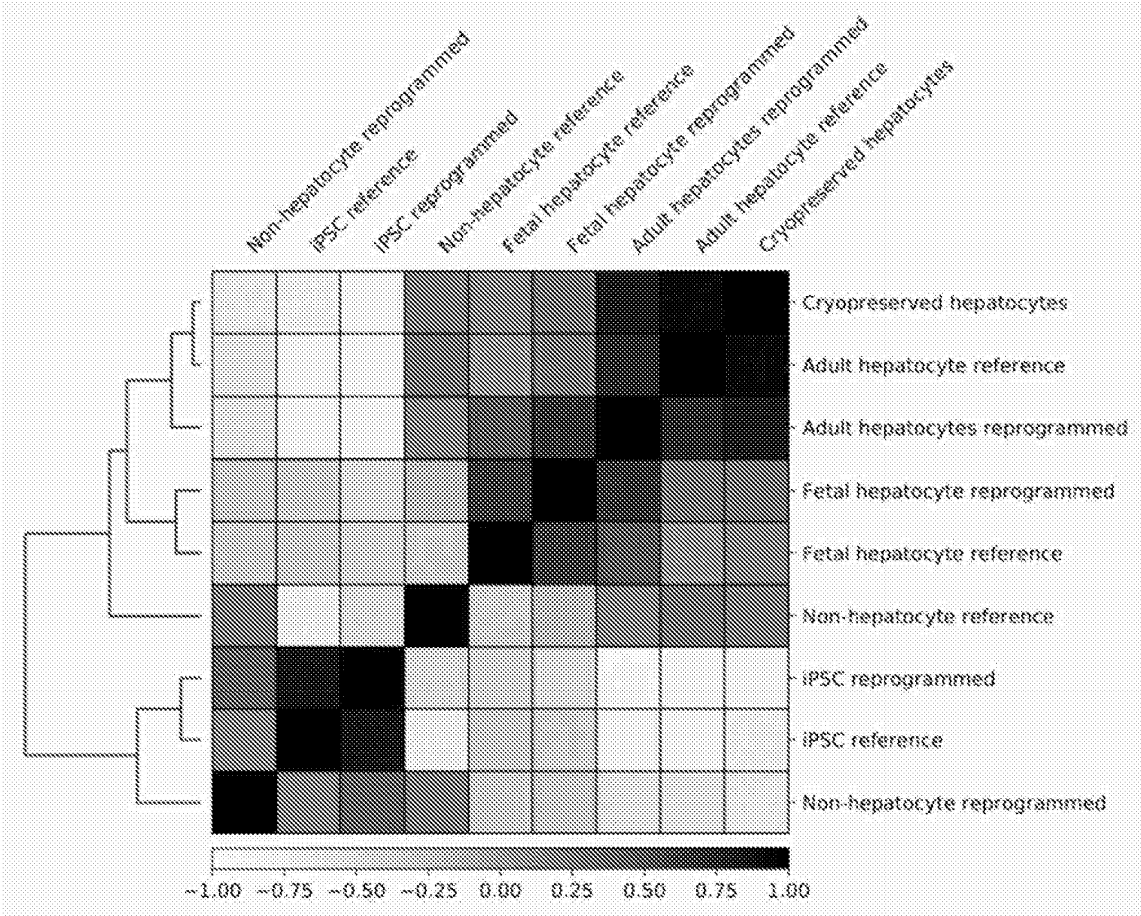
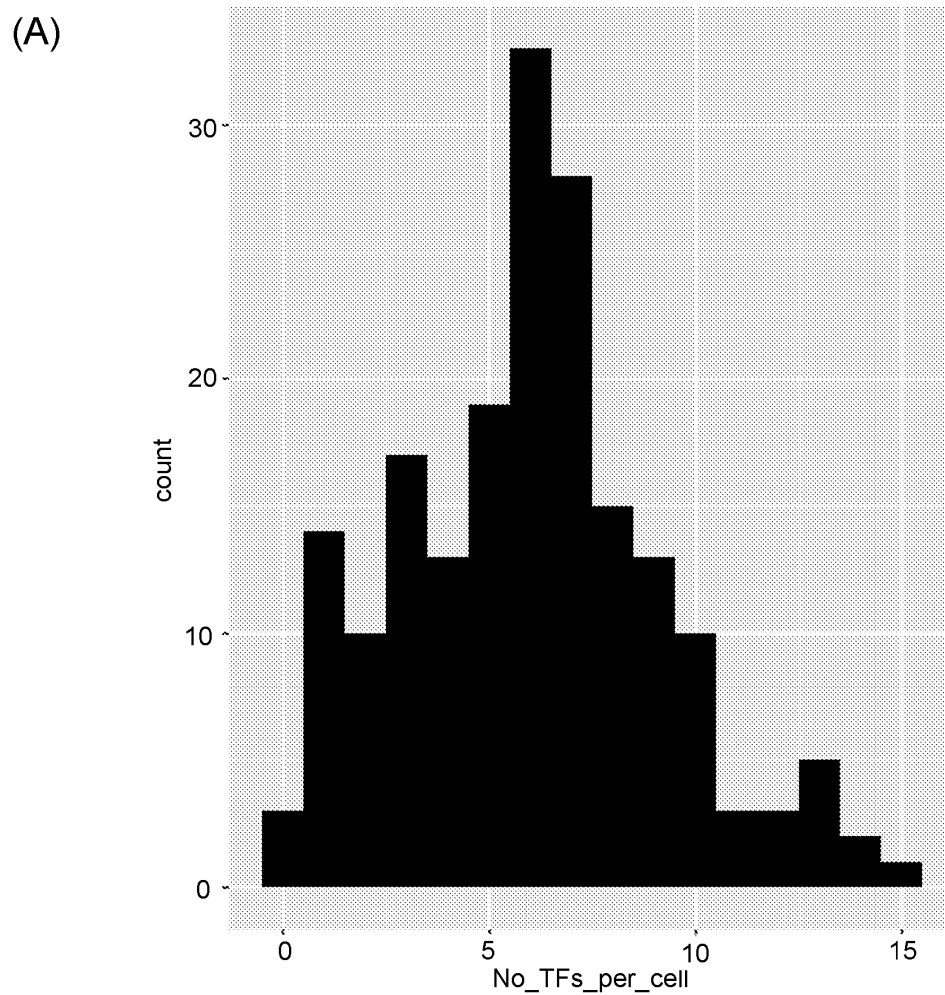


FIGURE 11

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**FIGURE 12**

(B)

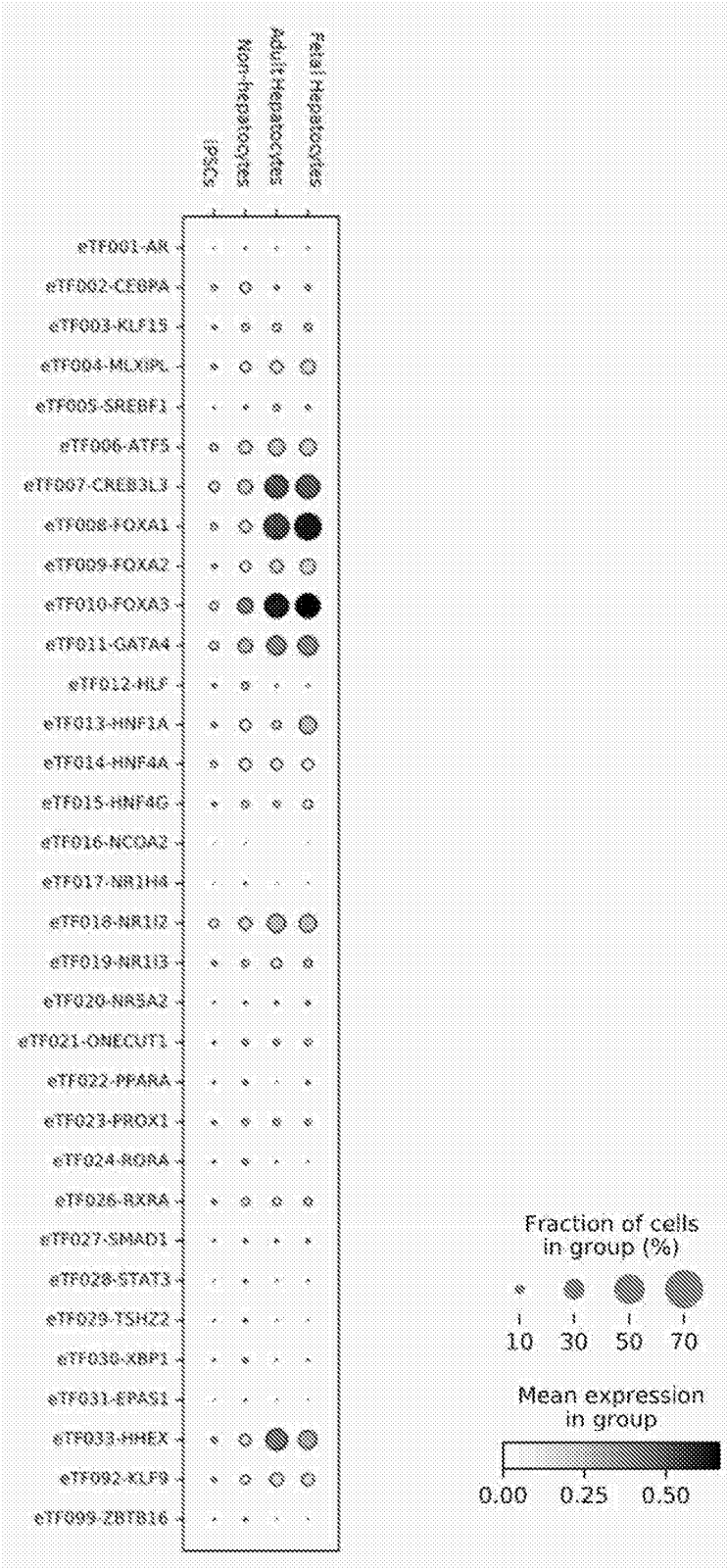


FIGURE 12 (continued)
SUBSTITUTE SHEET (RULE 26)

(C)

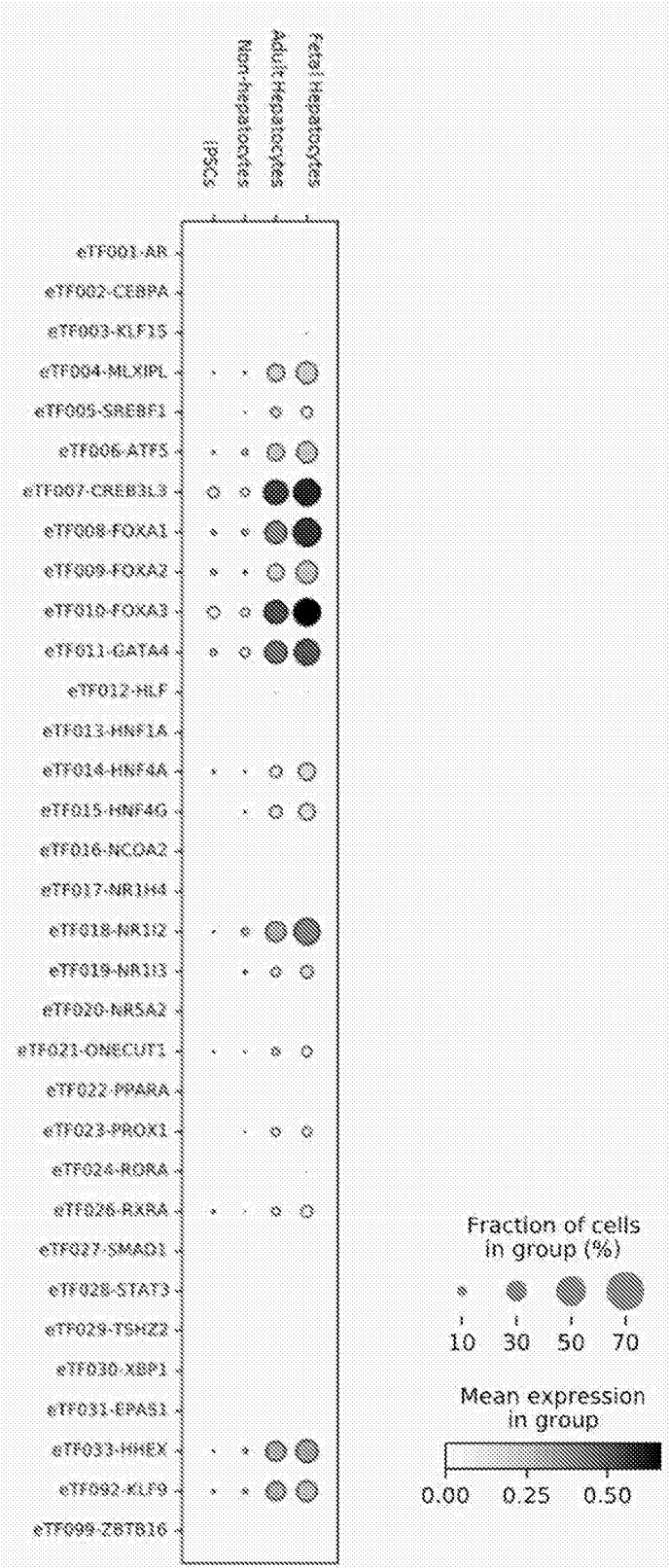


FIGURE 12 (continued)
SUBSTITUTE SHEET (RULE 26)

(D) Table 5

	Combination	% of cells with the combination
0	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4')	36
1	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF092-KLF9')	34
2	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF033-HHEX')	33
3	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF011-GATA4', 'eTF092-KLF9')	31
4	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF092-KLF9')	31
5	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF033-HHEX')	31
6	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF018-NR1I2')	31
7	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF011-GATA4', 'eTF033-HHEX')	30
8	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF018-NR1I2')	29
9	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF033-HHEX', 'eTF092-KLF9')	29
10	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF011-GATA4', 'eTF018-NR1I2')	29
11	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF033-HHEX', 'eTF092-KLF9')	28
12	('eTF007-CREB3L3', 'eTF011-GATA4', 'eTF033-HHEX', 'eTF092-KLF9')	28
13	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF092-KLF9')	27
14	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF011-GATA4')	27
15	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF033-HHEX')	27
16	('eTF007-CREB3L3', 'eTF011-GATA4', 'eTF018-NR1I2', 'eTF092-KLF9')	26
17	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF018-NR1I2', 'eTF092-KLF9')	26
18	('eTF007-CREB3L3', 'eTF011-GATA4', 'eTF018-NR1I2', 'eTF033-HHEX')	26
19	('eTF010-FOXA3', 'eTF011-GATA4', 'eTF033-HHEX', 'eTF092-KLF9')	26
20	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF018-NR1I2')	26
21	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF011-GATA4')	26
22	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF018-NR1I2', 'eTF092-KLF9')	25
23	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF011-GATA4', 'eTF092-KLF9')	25
24	('eTF010-FOXA3', 'eTF011-GATA4', 'eTF018-NR1I2', 'eTF092-KLF9')	25
25	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF011-GATA4')	25
26	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF018-NR1I2', 'eTF033-HHEX')	25
27	('eTF010-FOXA3', 'eTF011-GATA4', 'eTF018-NR1I2', 'eTF033-HHEX')	25
28	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF018-NR1I2', 'eTF033-HHEX')	25
29	('eTF008-FOXA1', 'eTF011-GATA4', 'eTF033-HHEX', 'eTF092-KLF9')	25
30	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF033-HHEX', 'eTF092-KLF9')	24
31	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3')	24
32	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF092-KLF9')	24
33	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF092-KLF9')	23
34	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF018-NR1I2', 'eTF092-KLF9')	23
35	('eTF008-FOXA1', 'eTF011-GATA4', 'eTF018-NR1I2', 'eTF092-KLF9')	23
36	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3')	23
37	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF011-GATA4')	23
38	('eTF006-ATF5', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF092-KLF9')	23

FIGURE 12 (continued)

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(D) Table 5 (continued)

	Combination	% of cells with the combination
39	('eTF007-CREB3L3', 'eTF018-NR1I2', 'eTF033-HHEX', 'eTF092-KLF9')	23
40	('eTF008-FOXA1', 'eTF011-GATA4', 'eTF018-NR1I2', 'eTF033-HHEX')	23
41	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF092-KLF9')	22
42	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF011-GATA4', 'eTF092-KLF9')	22
43	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF011-GATA4', 'eTF033-HHEX')	22
44	('eTF011-GATA4', 'eTF018-NR1I2', 'eTF033-HHEX', 'eTF092-KLF9')	22
45	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF033-HHEX')	22
46	('eTF006-ATF5', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4')	22
47	('eTF004-MLXIPL', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF092-KLF9')	22
48	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF033-HHEX')	21
49	('eTF004-MLXIPL', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4')	21
50	('eTF006-ATF5', 'eTF008-FOXA1', 'eTF011-GATA4', 'eTF092-KLF9')	21
51	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF018-NR1I2', 'eTF033-HHEX')	21
52	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF018-NR1I2')	21
53	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF033-HHEX')	21
54	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF033-HHEX', 'eTF092-KLF9')	21
55	('eTF006-ATF5', 'eTF008-FOXA1', 'eTF010-FOXA3', 'eTF092-KLF9')	21
56	('eTF008-FOXA1', 'eTF018-NR1I2', 'eTF033-HHEX', 'eTF092-KLF9')	21
57	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF092-KLF9')	20
58	('eTF006-ATF5', 'eTF010-FOXA3', 'eTF011-GATA4', 'eTF033-HHEX')	20
59	('eTF010-FOXA3', 'eTF018-NR1I2', 'eTF033-HHEX', 'eTF092-KLF9')	20
60	('eTF007-CREB3L3', 'eTF009-FOXA2', 'eTF010-FOXA3', 'eTF011-GATA4')	20

FIGURE 12 (continued)

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(E) Table 6

	Combination	% of cells with the combination
0	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF011-GATA4')	42
1	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF010-FOXA3')	38
2	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF011-GATA4')	38
3	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF033-HHEX')	35
4	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF092-KLF9')	34
5	('eTF007-CREB3L3', 'eTF011-GATA4', 'eTF092-KLF9')	33
6	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF011-GATA4')	33
7	('eTF007-CREB3L3', 'eTF011-GATA4', 'eTF033-HHEX')	32
8	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF092-KLF9')	32
9	('eTF007-CREB3L3', 'eTF010-FOXA3', 'eTF018-NR1I2')	32
10	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF033-HHEX')	31
11	('eTF010-FOXA3', 'eTF011-GATA4', 'eTF092-KLF9')	31
12	('eTF007-CREB3L3', 'eTF011-GATA4', 'eTF018-NR1I2')	31
13	('eTF010-FOXA3', 'eTF011-GATA4', 'eTF033-HHEX')	31
14	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF018-NR1I2')	30
15	('eTF010-FOXA3', 'eTF011-GATA4', 'eTF018-NR1I2')	30
16	('eTF007-CREB3L3', 'eTF033-HHEX', 'eTF092-KLF9')	29
17	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF092-KLF9')	28
18	('eTF008-FOXA1', 'eTF011-GATA4', 'eTF092-KLF9')	28
19	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF018-NR1I2')	27
20	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF011-GATA4')	27
21	('eTF008-FOXA1', 'eTF010-FOXA3', 'eTF033-HHEX')	27
22	('eTF008-FOXA1', 'eTF011-GATA4', 'eTF033-HHEX')	27
23	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF010-FOXA3')	27
24	('eTF008-FOXA1', 'eTF011-GATA4', 'eTF018-NR1I2')	27
25	('eTF010-FOXA3', 'eTF033-HHEX', 'eTF092-KLF9')	27
26	('eTF007-CREB3L3', 'eTF018-NR1I2', 'eTF092-KLF9')	26
27	('eTF011-GATA4', 'eTF033-HHEX', 'eTF092-KLF9')	26
28	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF010-FOXA3')	26
29	('eTF007-CREB3L3', 'eTF018-NR1I2', 'eTF033-HHEX')	25
30	('eTF010-FOXA3', 'eTF018-NR1I2', 'eTF092-KLF9')	25
31	('eTF008-FOXA1', 'eTF033-HHEX', 'eTF092-KLF9')	25
32	('eTF011-GATA4', 'eTF018-NR1I2', 'eTF033-HHEX')	25
33	('eTF006-ATF5', 'eTF010-FOXA3', 'eTF011-GATA4')	25
34	('eTF011-GATA4', 'eTF018-NR1I2', 'eTF092-KLF9')	25
35	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF008-FOXA1')	25
36	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF011-GATA4')	24
37	('eTF004-MLXIPL', 'eTF010-FOXA3', 'eTF011-GATA4')	24
38	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF092-KLF9')	24

FIGURE 12 (continued)

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(E) Table 6 (continued)

	Combination	% of cells with the combination
39	('eTF008-FOXA1', 'eTF018-NR1I2', 'eTF092-KLF9')	24
40	('eTF010-FOXA3', 'eTF018-NR1I2', 'eTF033-HHEX')	23
41	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF008-FOXA1')	23
42	('eTF006-ATF5', 'eTF011-GATA4', 'eTF092-KLF9')	23
43	('eTF006-ATF5', 'eTF008-FOXA1', 'eTF010-FOXA3')	22
44	('eTF006-ATF5', 'eTF008-FOXA1', 'eTF011-GATA4')	22
45	('eTF006-ATF5', 'eTF010-FOXA3', 'eTF092-KLF9')	22
46	('eTF008-FOXA1', 'eTF018-NR1I2', 'eTF033-HHEX')	22
47	('eTF006-ATF5', 'eTF007-CREB3L3', 'eTF033-HHEX')	21
48	('eTF004-MLXIPL', 'eTF008-FOXA1', 'eTF010-FOXA3')	21
49	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF092-KLF9')	21
50	('eTF018-NR1I2', 'eTF033-HHEX', 'eTF092-KLF9')	21
51	('eTF006-ATF5', 'eTF008-FOXA1', 'eTF092-KLF9')	21
52	('eTF004-MLXIPL', 'eTF008-FOXA1', 'eTF011-GATA4')	20
53	('eTF004-MLXIPL', 'eTF010-FOXA3', 'eTF092-KLF9')	20
54	('eTF007-CREB3L3', 'eTF009-FOXA2', 'eTF010-FOXA3')	20
55	('eTF004-MLXIPL', 'eTF007-CREB3L3', 'eTF018-NR1I2')	20
56	('eTF007-CREB3L3', 'eTF008-FOXA1', 'eTF009-FOXA2')	20

FIGURE 12 (continued)

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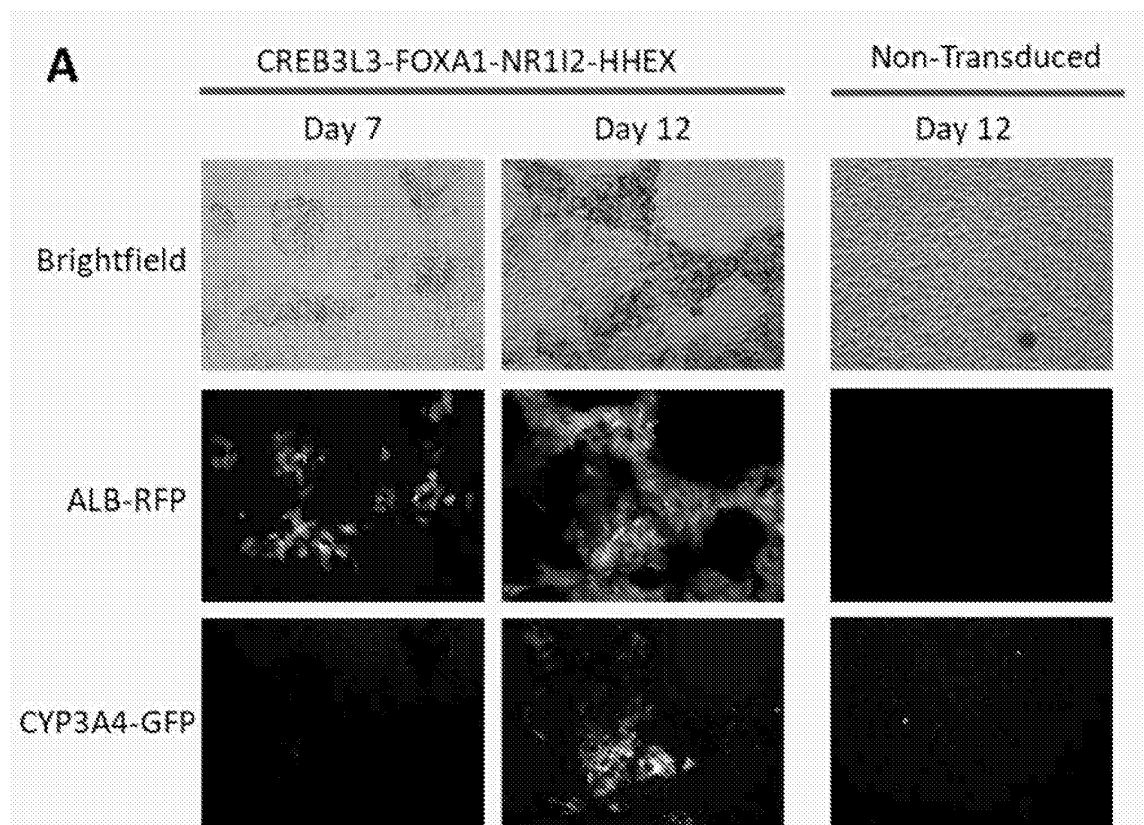


FIGURE 13

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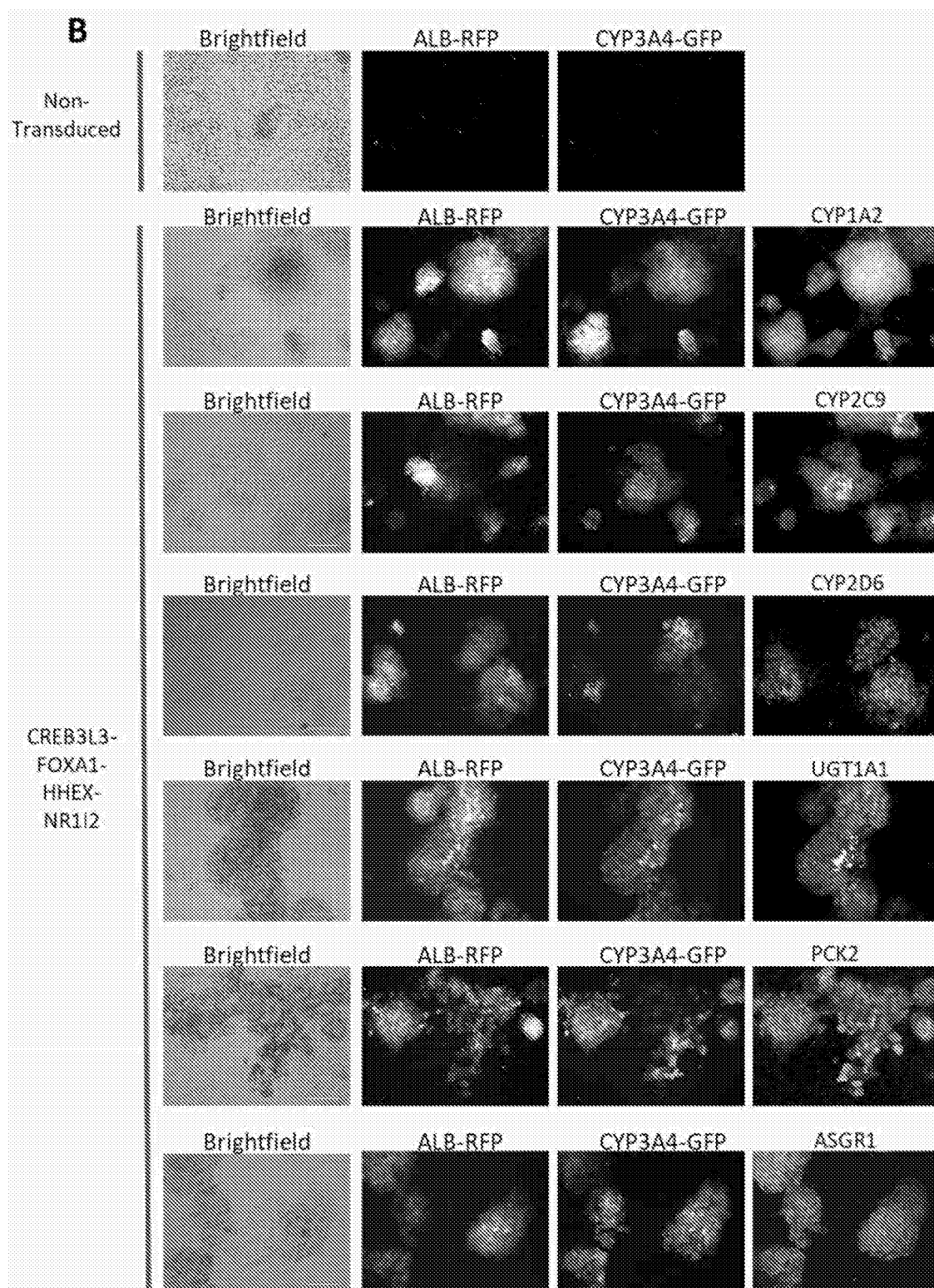


FIGURE 13 (continued)

SUBSTITUTE SHEET (RULE 26)

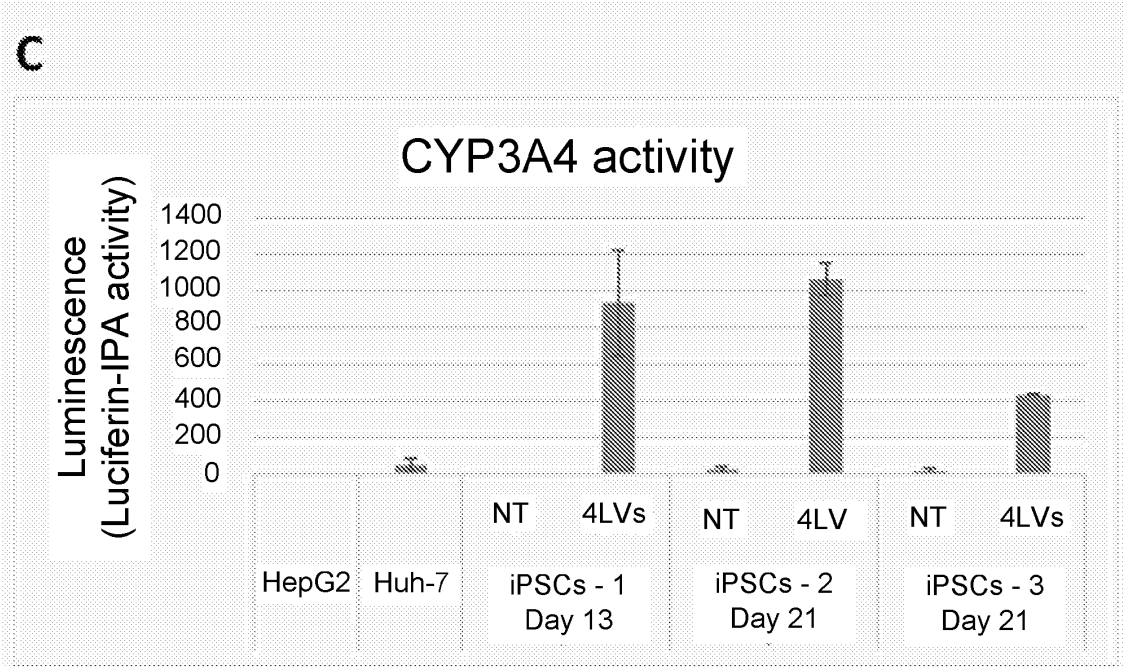


FIGURE 13 (continued)

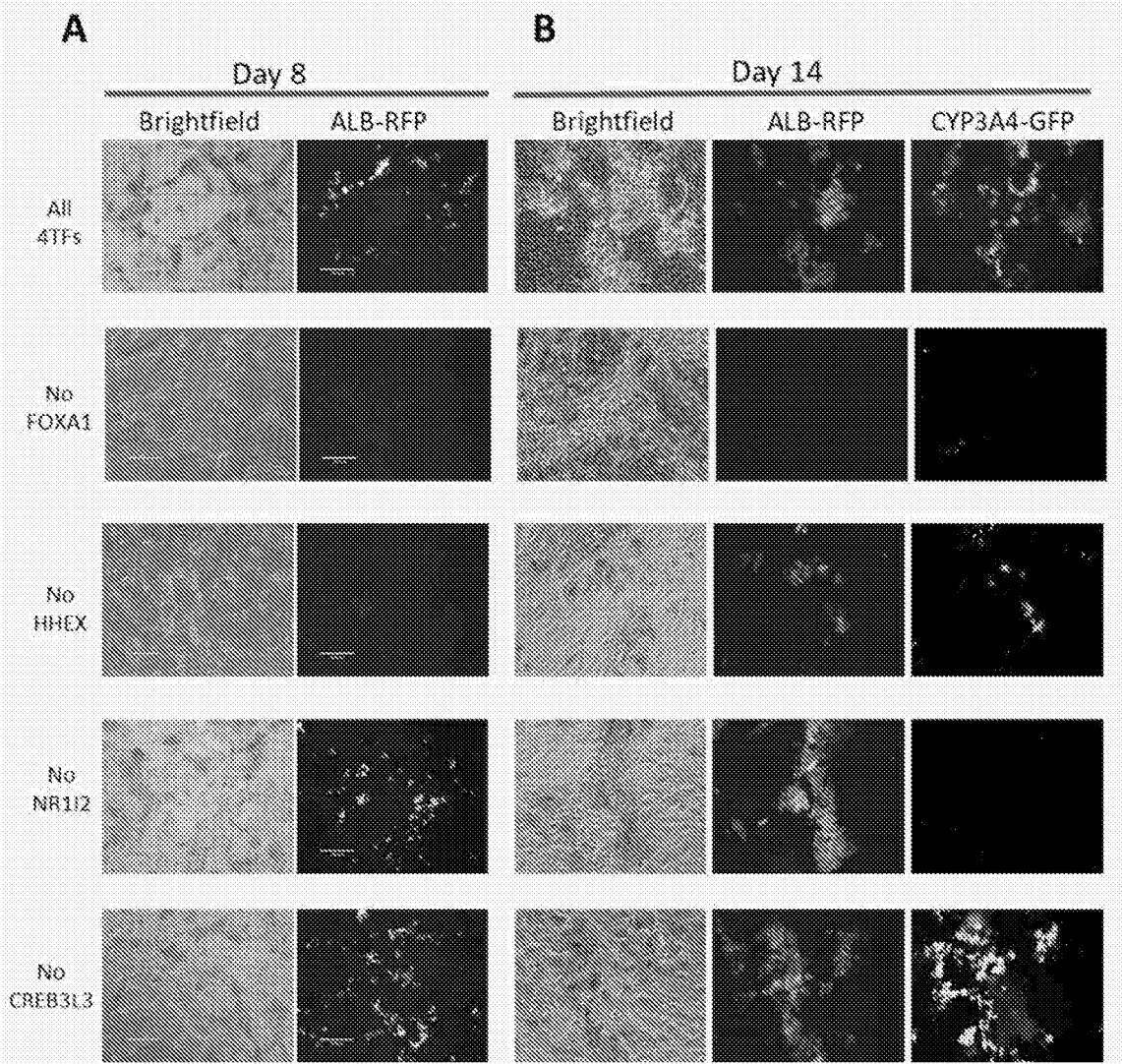


FIGURE 14

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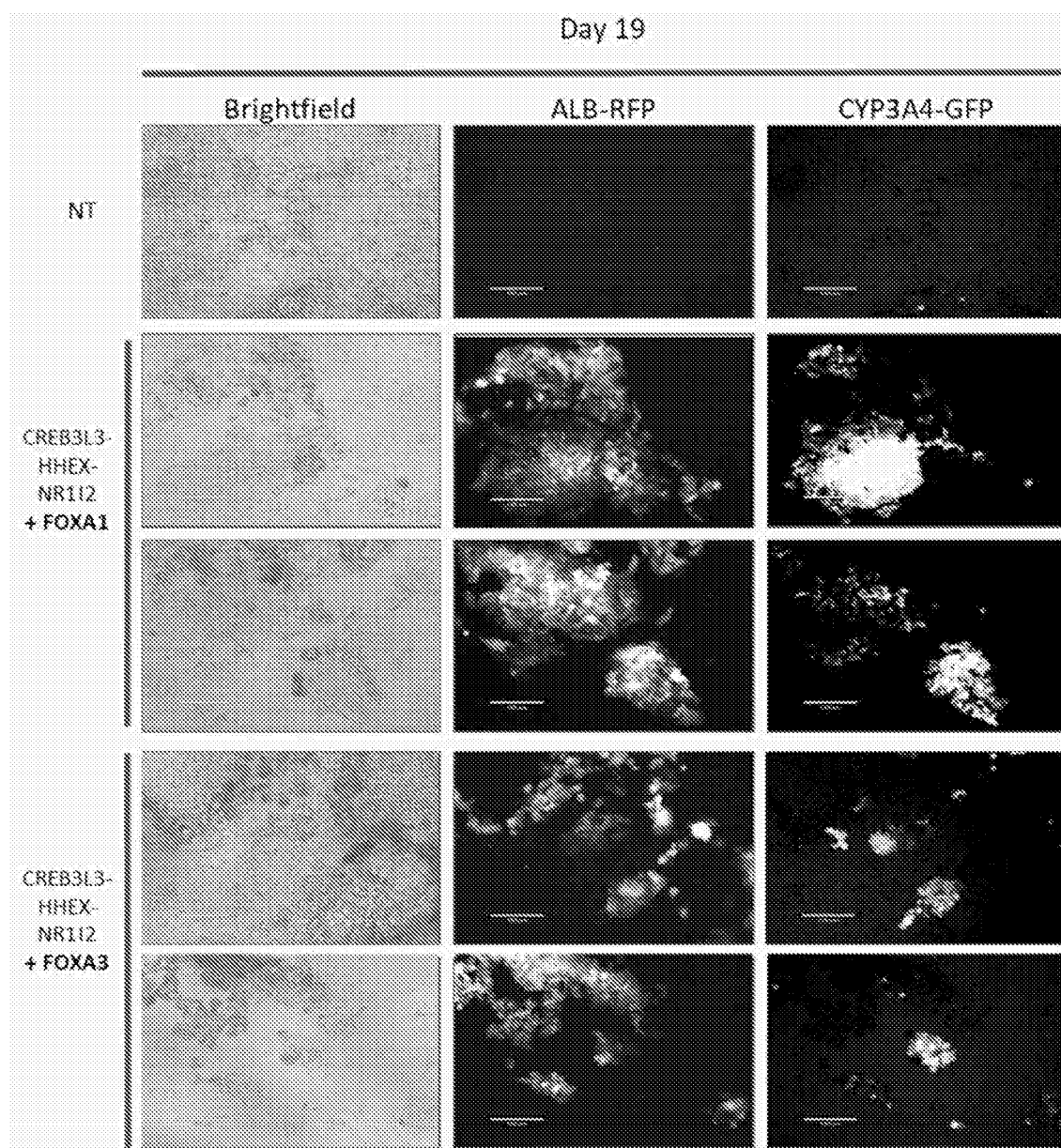


FIGURE 15

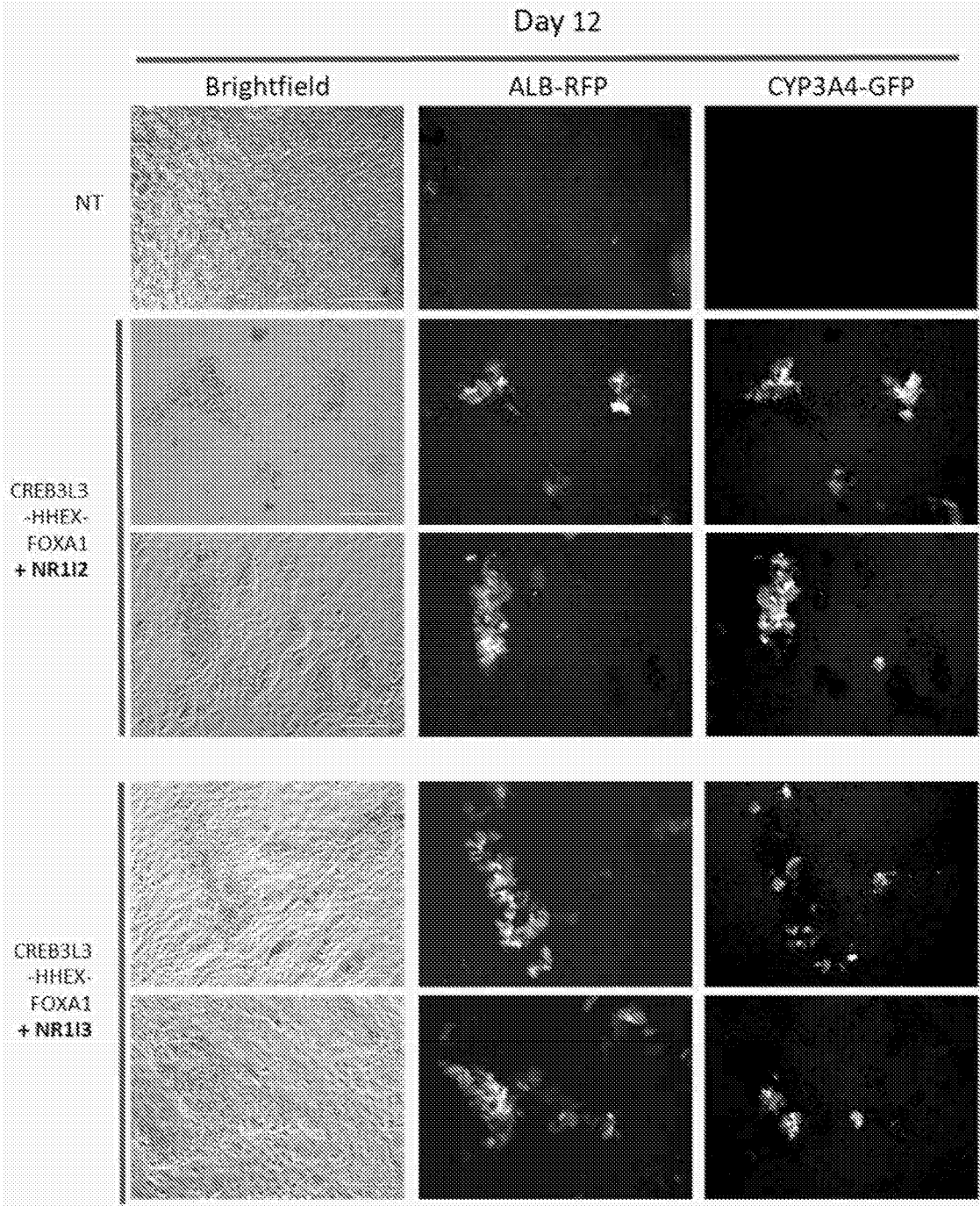


FIGURE 16