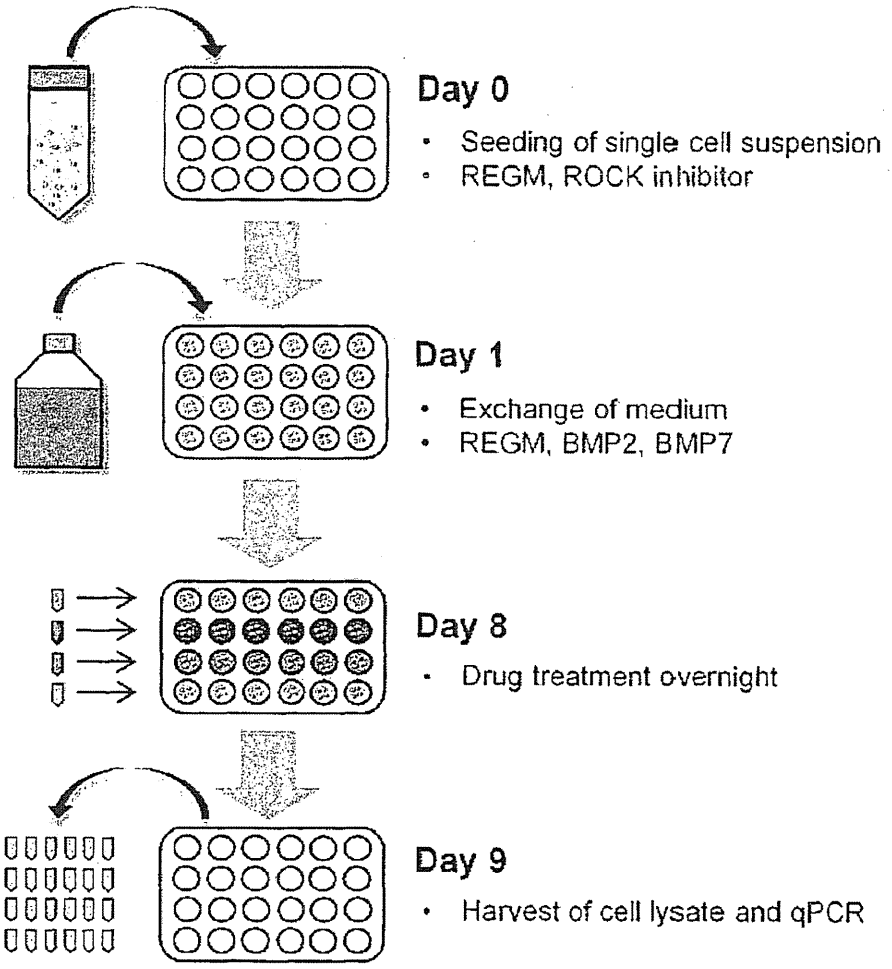

Day 0
• Seeding of single cell suspension
• REGM, ROCK inhibitor
Day 1
• Exchange of medium
• REGM, BMP2, BMP7
Day 8
• Drug treatment overnight
Day 9
• Harvest of cell lysate and qPCR

FIGURE 1

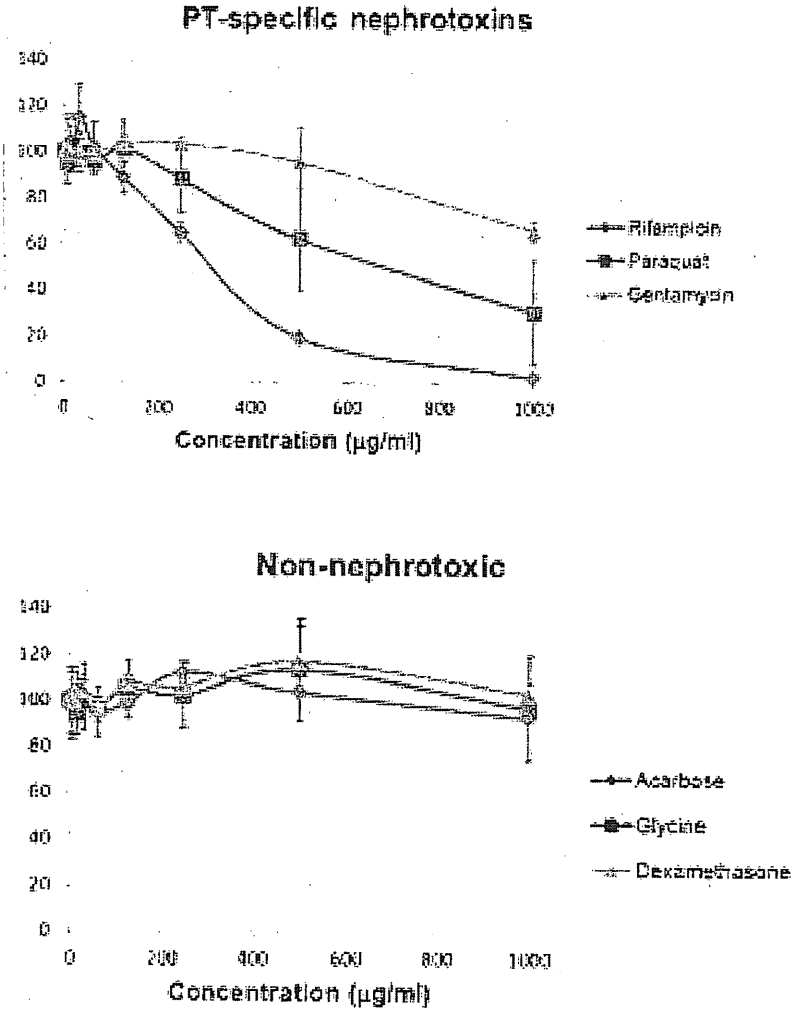

PT-specific nephrotoxins
140
120
100
80
60
40
20
0
0
200
400
600
800
1000
Concentration (µg/ml)
Rifampicin
Paraquat
Gentamycin
Non-nephrotoxic
140
120
100
80
60
40
20
0
0
200
400
600
800
1000
Concentration (µg/ml)
Acarbose
Glycine
Dexamethasone

FIGURE 2

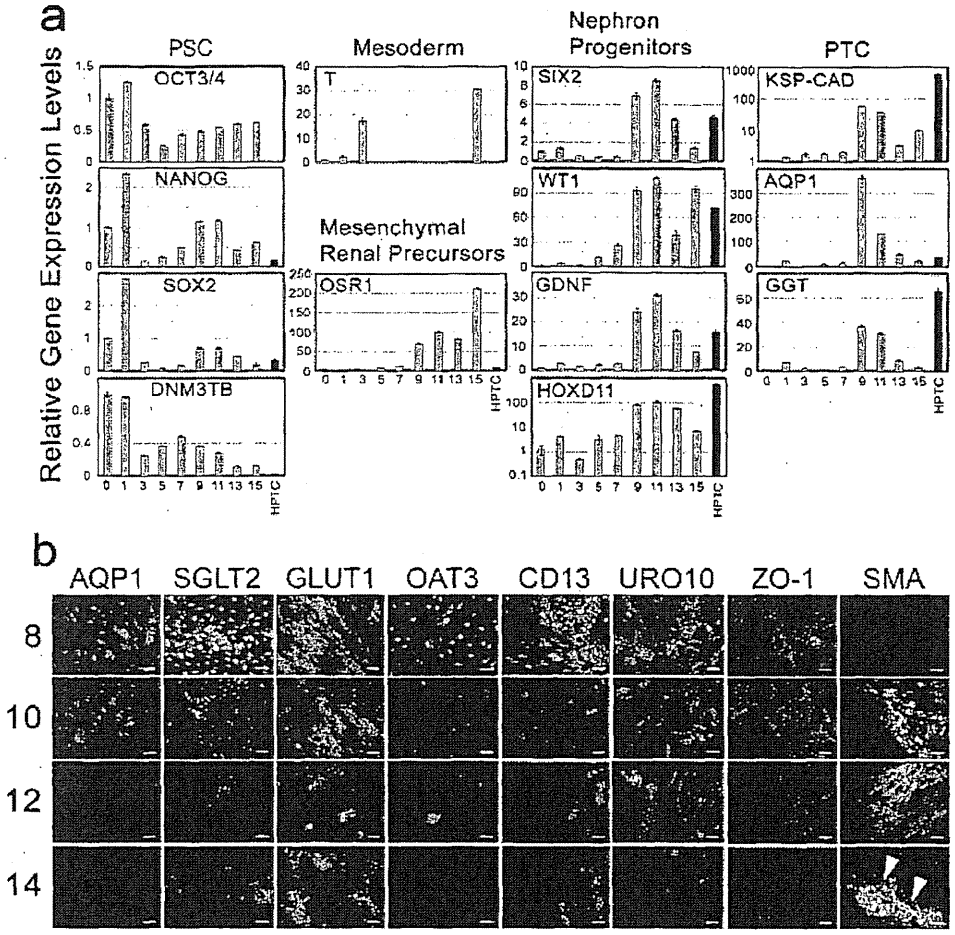

a
Relative Gene Expression Levels
PSC
Mesoderm
Nephron Progenitors
PTC
OCT3/4
NANOG
SOX2
DNM3TB
T
Mesenchymal Renal Precursors
OSR1
SIX2
WT1
GDNF
HOXD11
KSP-CAD
AQP1
GGT
HPTC
b
AQP1
SGLT2
GLUT1
OAT3
CD13
URO10
ZO-1
SMA
8
10
12
14

FIGURE 3

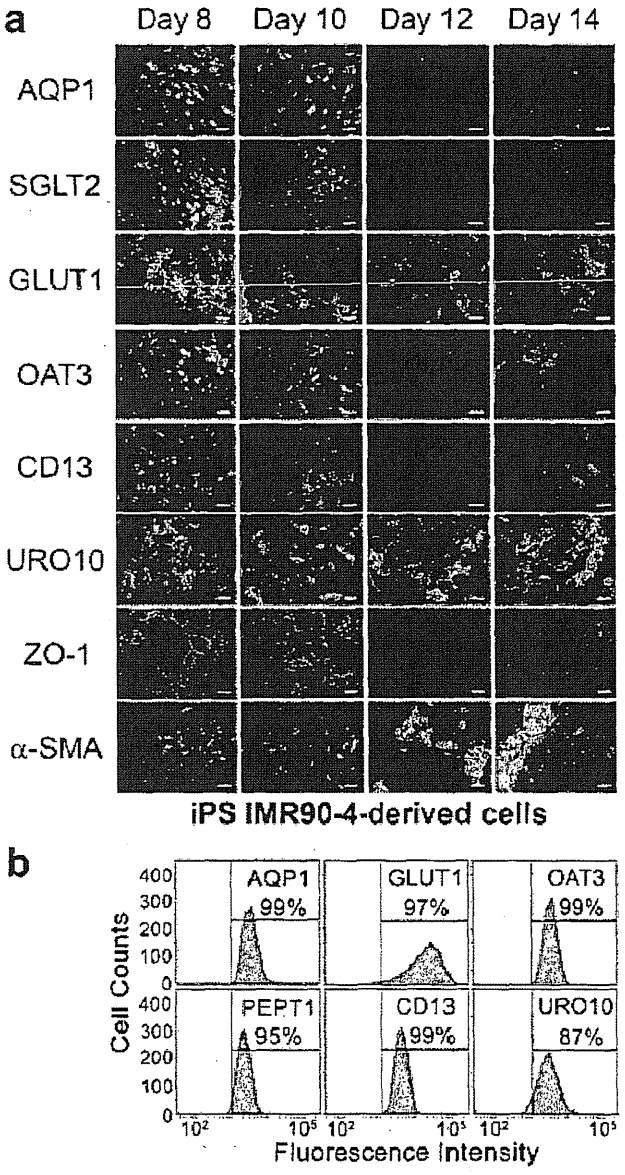

a
Day 8
Day 10
Day 12
Day 14
AQP1
SGLT2
GLUT1
OAT3
CD13
URO10
ZO-1
α-SMA
iPS IMR90-4-derived cells
b
AQP1
99%
GLUT1
97%
OAT3
99%
PEPT1
95%
CD13
99%
URO10
87%
Cell Counts
400
300
200
100
0
10²
10⁵
Fluorescence Intensity

FIGURE 4

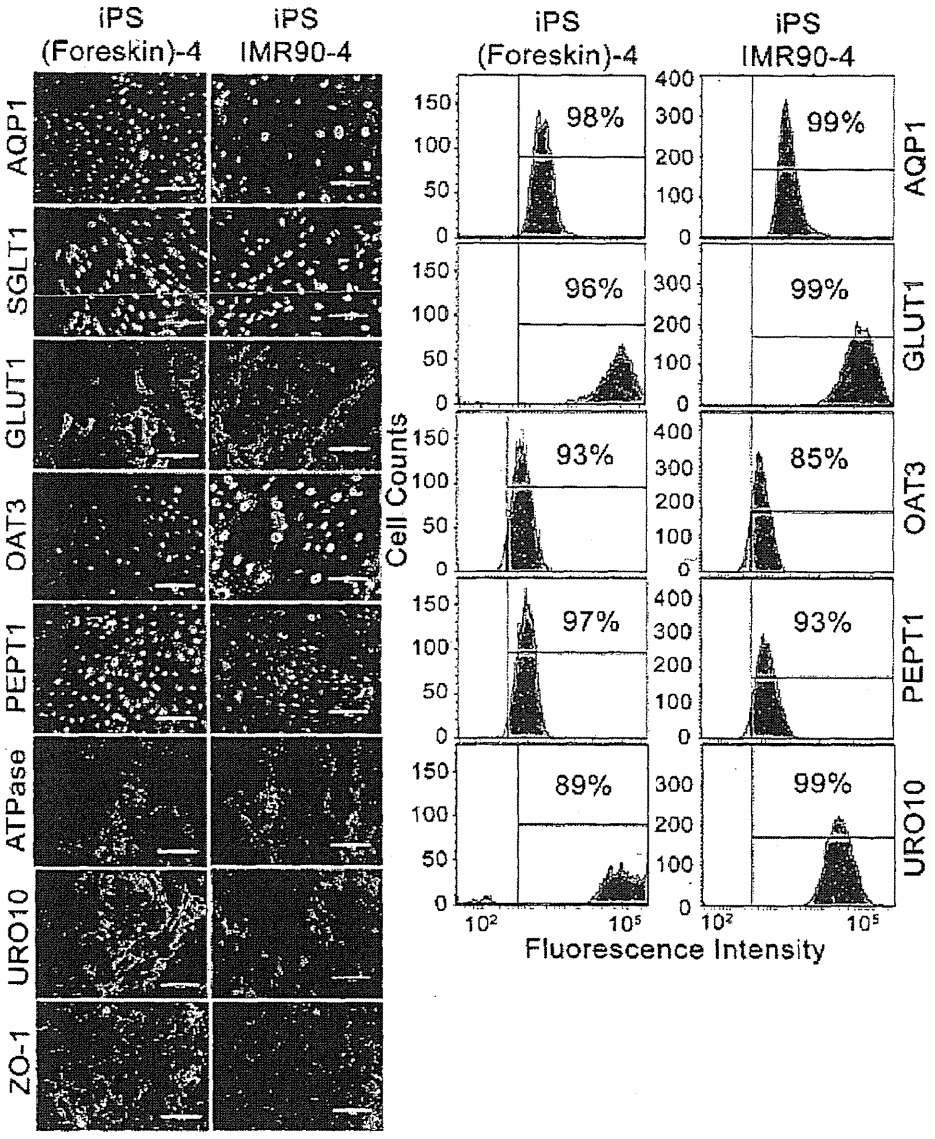

iPS (Foreskin)-4
iPS IMR90-4
AQP1
SGLT1
GLUT1
OAT3
PEPT1
ATPase
URO10
ZO-1
98%
99%
96%
99%
93%
85%
97%
93%
89%
99%
Cell Counts
Fluorescence Intensity

FIGURE 5

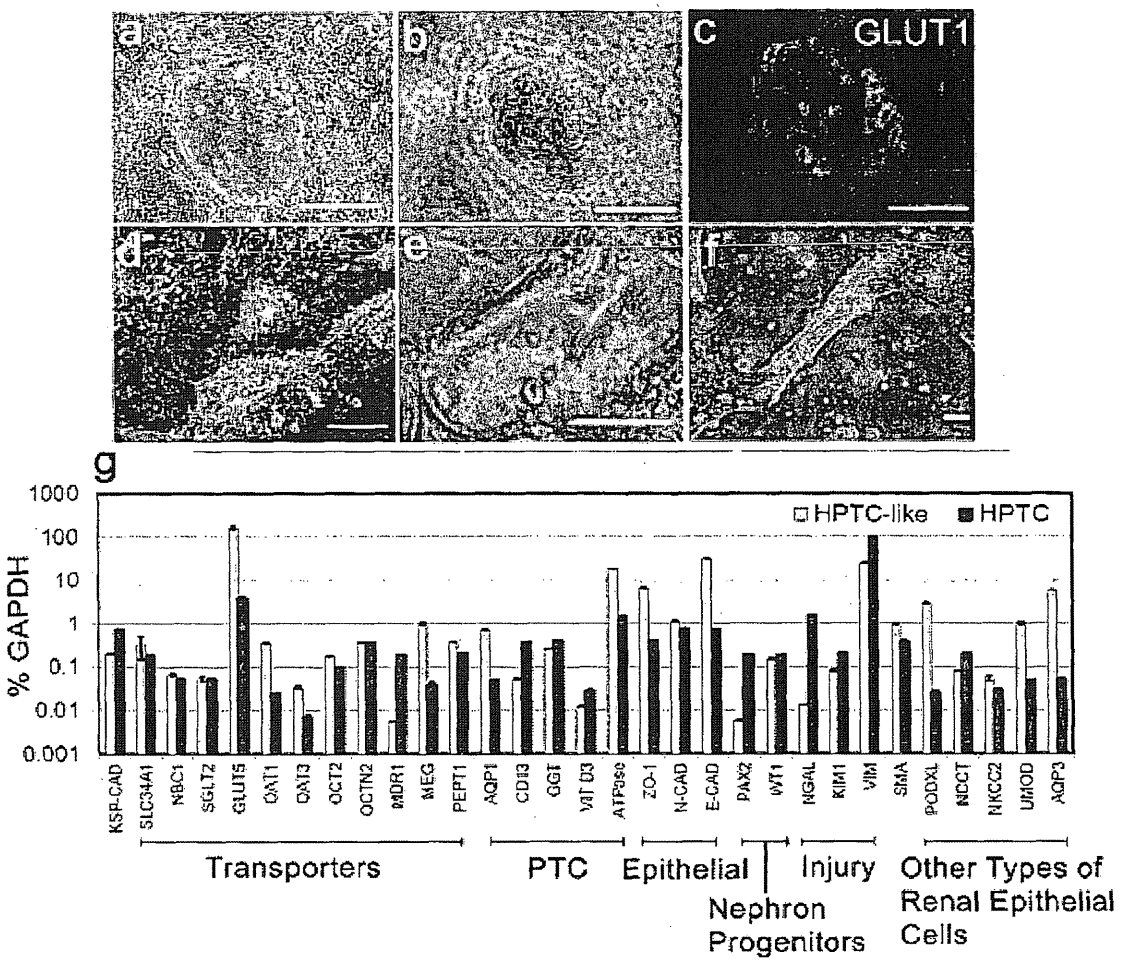

a
b
c
GLUT1
d
e
f
g
1000
100
10
1
0.1
0.01
0.001
% GAPDH
HPTC-like
HPTC
KSP-CAD
SLC34A1
NBC1
SGLT2
GLUT5
OAT1
OAT3
OCT2
OCTN2
MDR1
MEG
PEPT1
AQP1
CD13
GGT
V-ATPase
ZO-1
N-CAD
E-CAD
PAX2
WT1
NGAL
KIM1
VIM
SMA
PODXL
NCCT
NKCC2
UMOD
AQP2
Transporters
PTC
Epithelial
Injury
Other Types of Renal Epithelial Cells
Nephron Progenitors

FIGURE 6

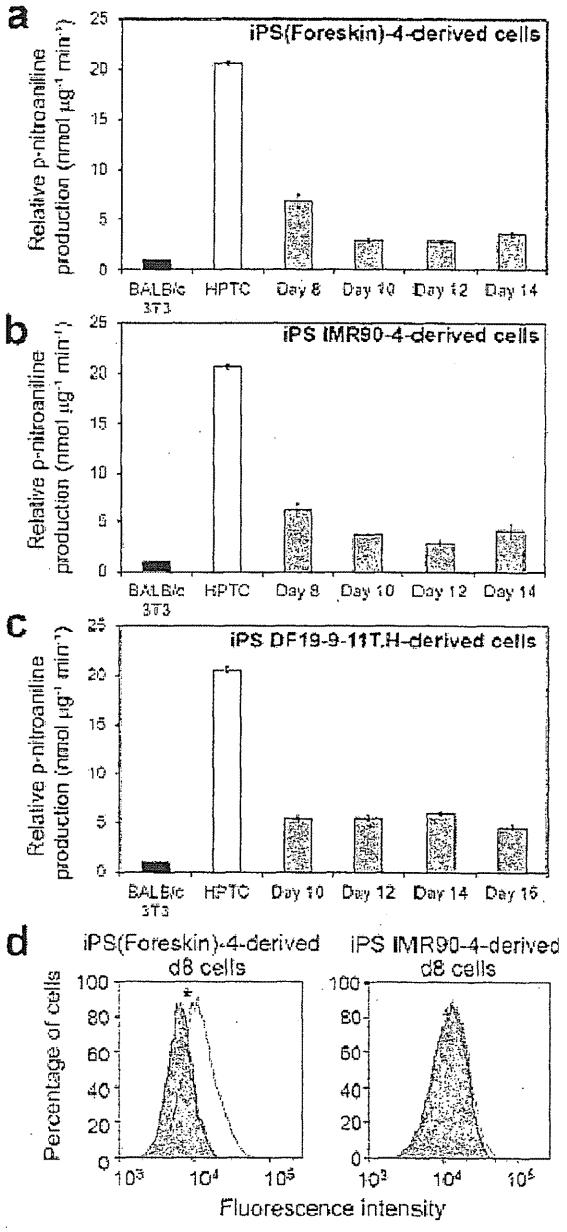

a
iPS(Foreskin)-4-derived cells
Relative p-nitroaniline production (nmol μg-1 min-1)
25
20
15
10
5
0
BALB/c 3T3
HPTC
Day 8
Day 10
Day 12
Day 14
b
iPS IMR90-4-derived cells
Relative p-nitroaniline production (nmol μg-1 min-1)
BALB/c 3T3
HPTC
Day 8
Day 10
Day 12
Day 14
c
iPS DF19-9-11T.H-derived cells
Relative p-nitroaniline production (nmol μg-1 min-1)
BALB/c 3T3
HPTC
Day 10
Day 12
Day 14
Day 16
d
iPS(Foreskin)-4-derived d8 cells
iPS IMR90-4-derived d8 cells
Percentage of cells
100
80
60
40
20
0
10³
10⁴
10⁵
Fluorescence intensity

FIGURE 7

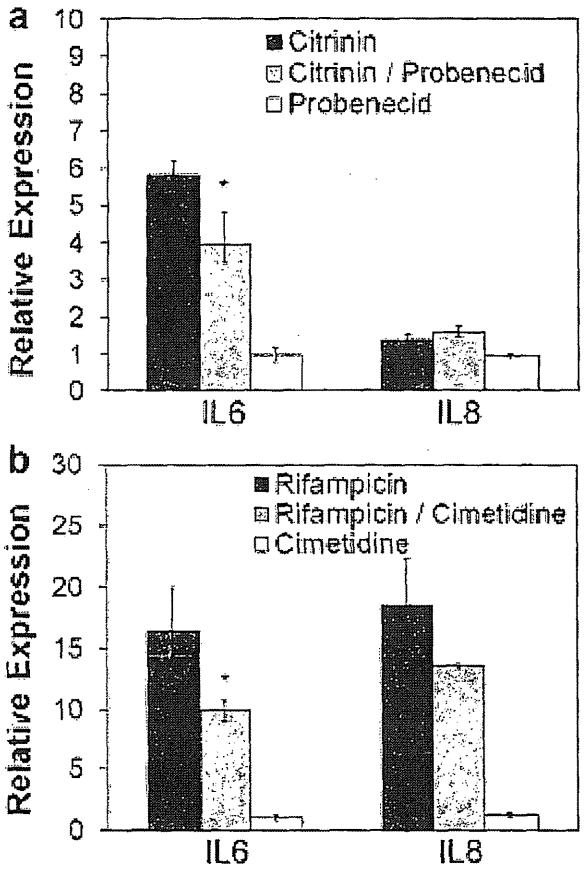

a
Relative Expression
10
9
8
7
6
5
4
3
2
1
0
Citrinin
Citrinin / Probenecid
Probenecid
IL6
IL8
b
Relative Expression
30
25
20
15
10
5
0
Rifampicin
Rifampicin / Cimetidine
Cimetidine
IL6
IL8

FIGURE 8

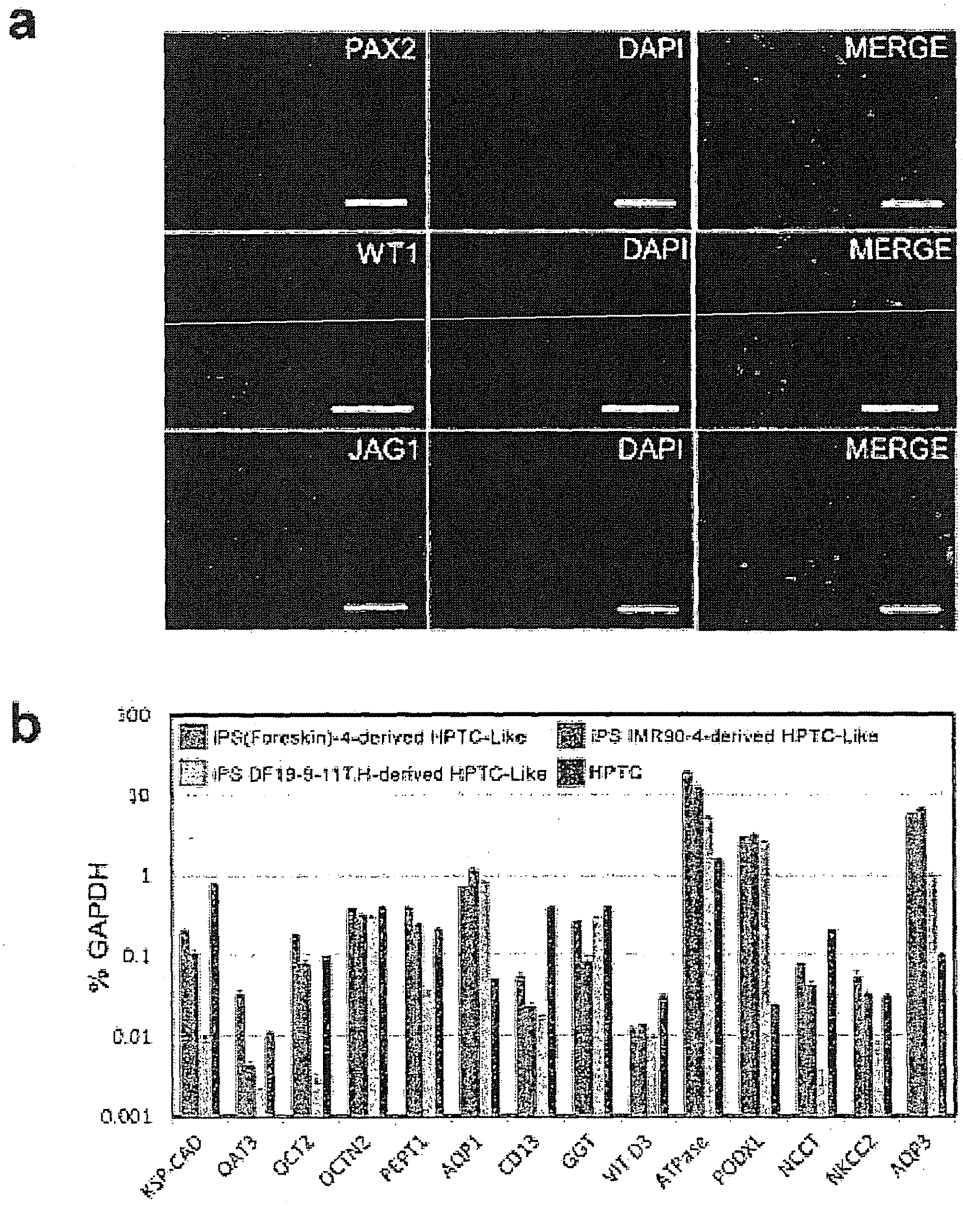

a
PAX2
DAPI
MERGE
WT1
DAPI
MERGE
JAG1
DAPI
MERGE
b
IPS(Foreskin)-4-derived HPTC-Like
IPS IMR90-4-derived HPTC-Like
IPS DF19-9-11T.H-derived HPTC-Like
HPTC
% GAPDH
100
10
1
0.1
0.01
0.001
KSP-CAD
OAT3
GCT2
OCTN2
PEPT1
AQP1
CD13
GGT
VIT D3
ATPase
PODXL
NCCT
NKCC2
AQP3

FIGURE 9

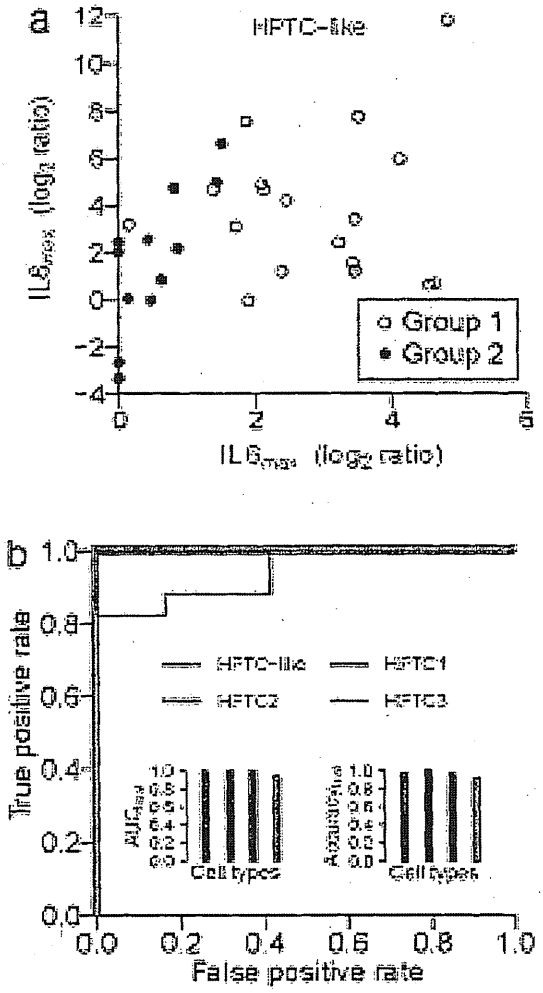

a
HPTC-like
Group 1
Group 2
b
HPTC-like
HPTC1
HPTC2
HPTC3
True positive rate
False positive rate
Cell types
Cell types

FIGURE 10