
cells

Fig. 1

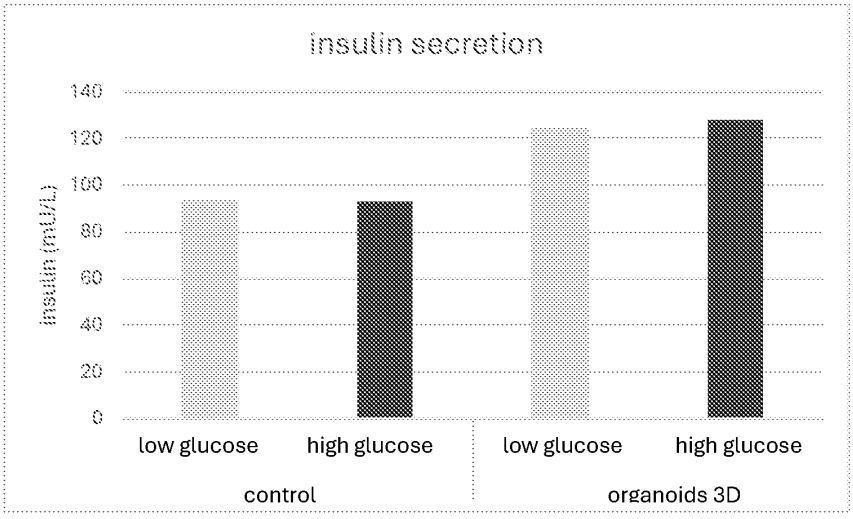

insulin secretion
insulin (mU/L)
140
120
100
80
60
40
20
0
low glucose
high glucose
low glucose
high glucose
control
organoids 3D

Fig. 2

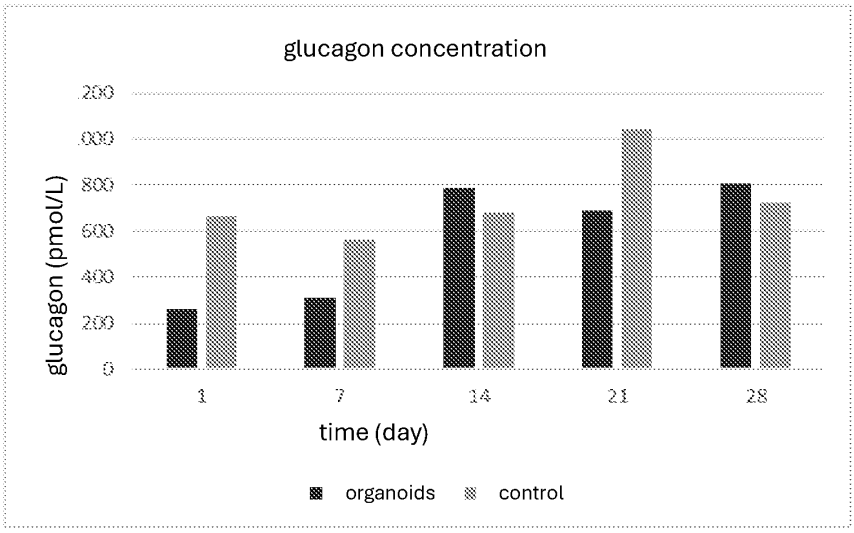

glucagon concentration
200
000
800
600
400
200
0
glucagon (pmol/L)
1
7
14
21
28
time (day)
organoids
control

Fig. 3

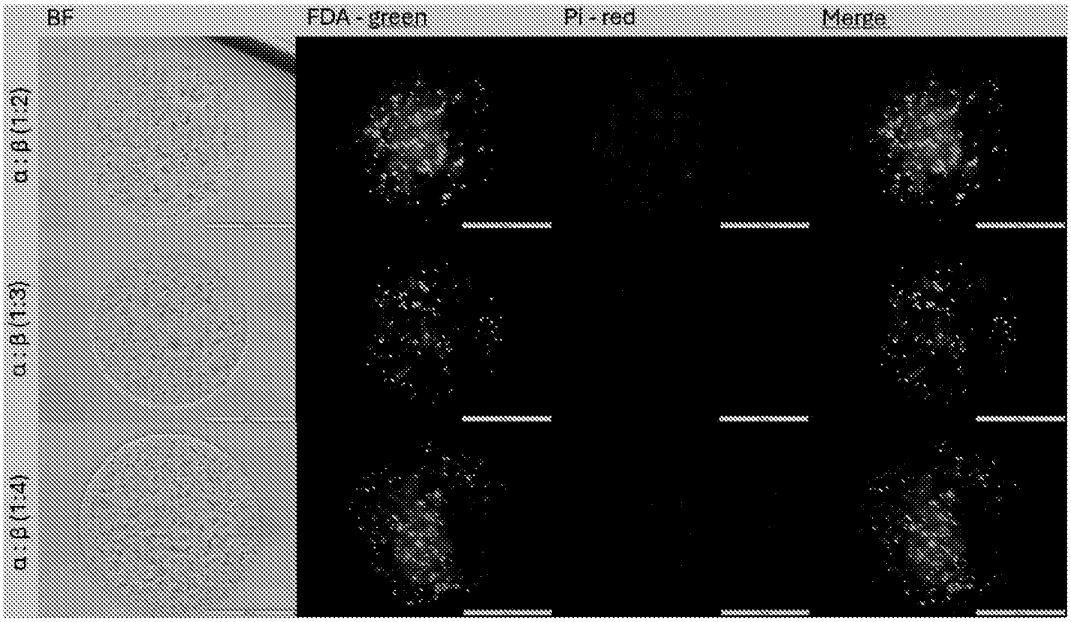

BF
FDA - green
PI - red
Merge
α : β (1:2)
α : β (1:3)
α : β (1:4)

Fig. 4

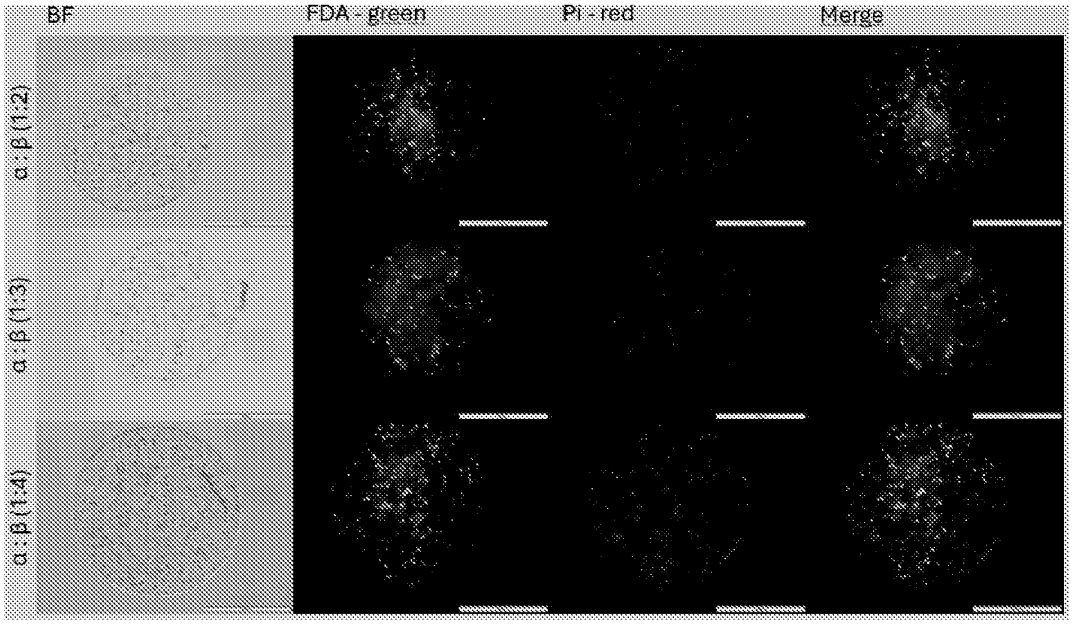

BF
FDA - green
PI - red
Merge
α : β (1:2)
α : β (1:3)
α : β (1:4)

Fig. 5

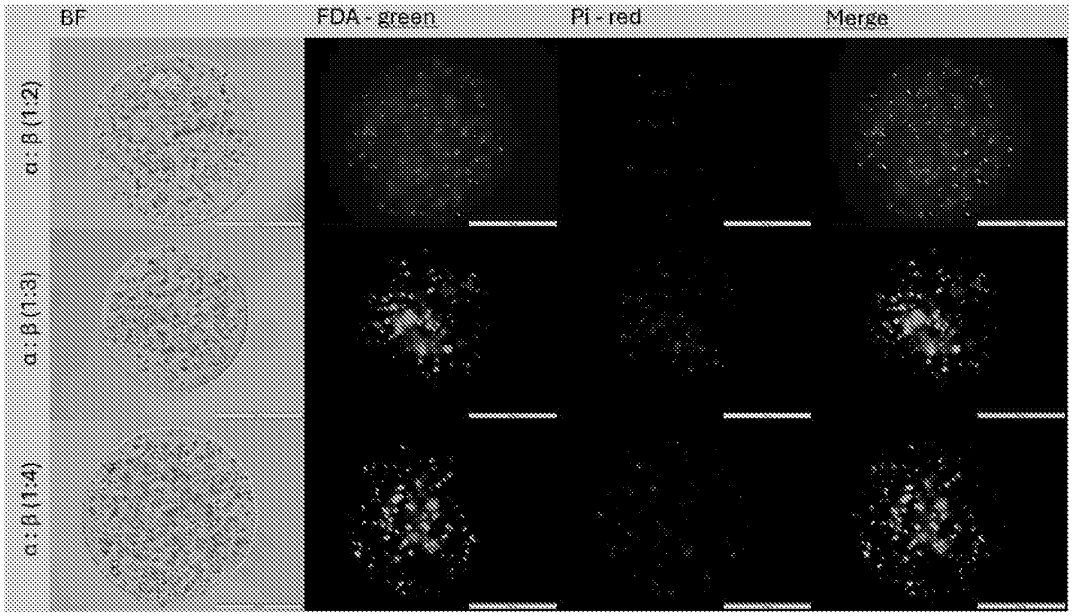

BF
FDA - green
PI - red
Merge
α : β (1:2)
α : β (1:3)
α : β (1:4)

Fig. 6

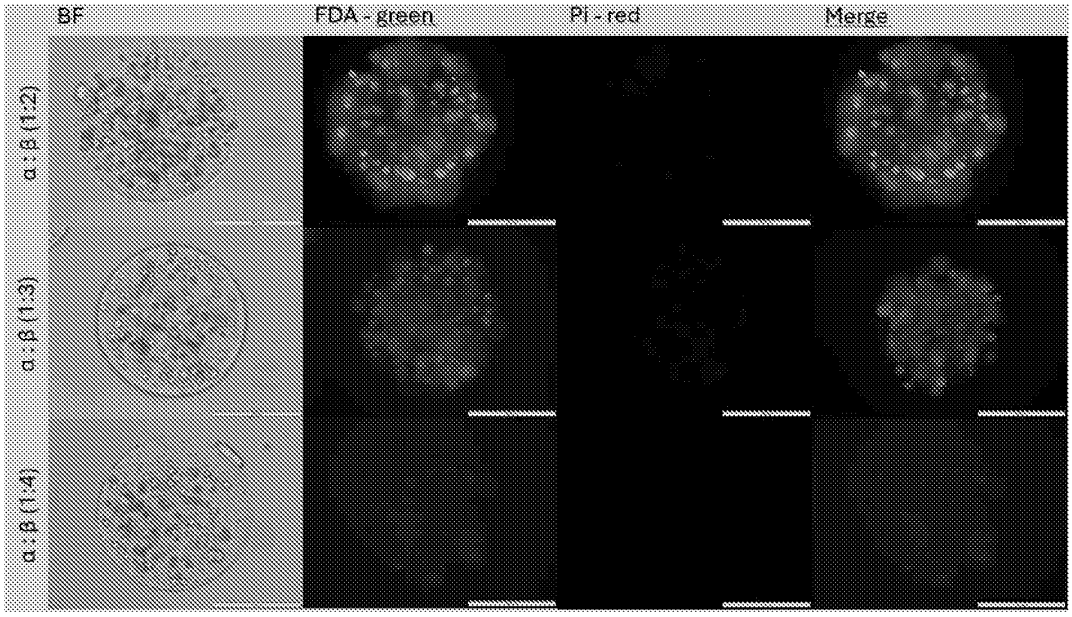

BF
FDA - green
PI - red
Merge
α : β (1:2)
α : β (1:3)
α : β (1:4)

Fig. 7

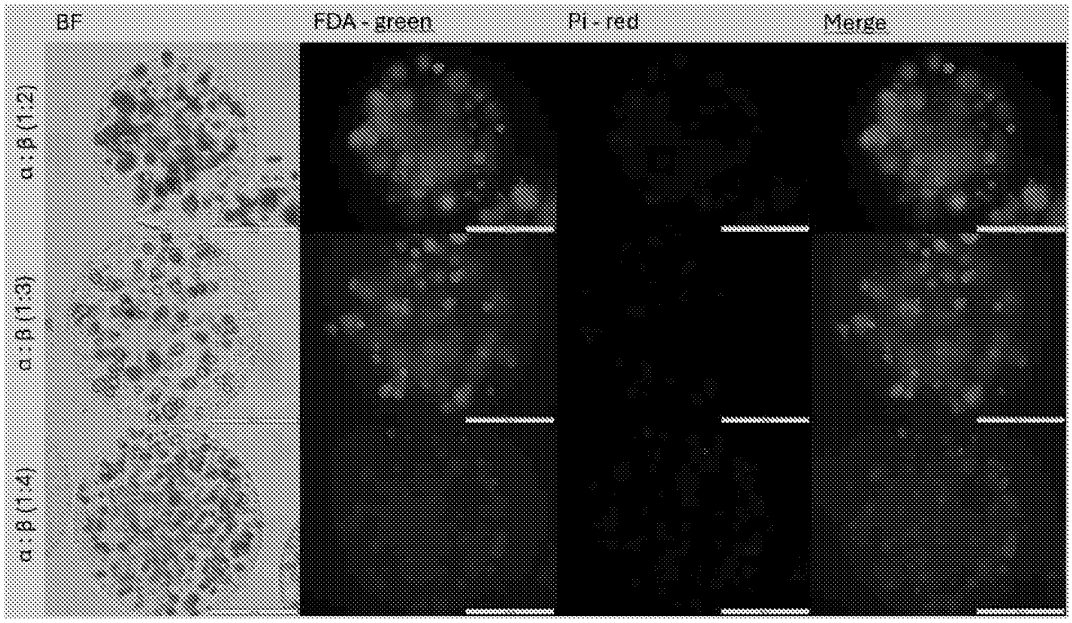

BF
FDA - green
PI - red
Merge
α : β (1:2)
α : β (1:3)
α : β (1:4)

Fig. 8

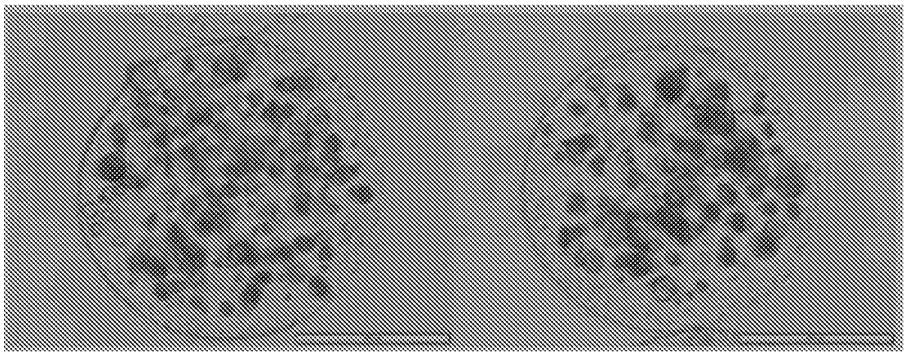


Fig. 9

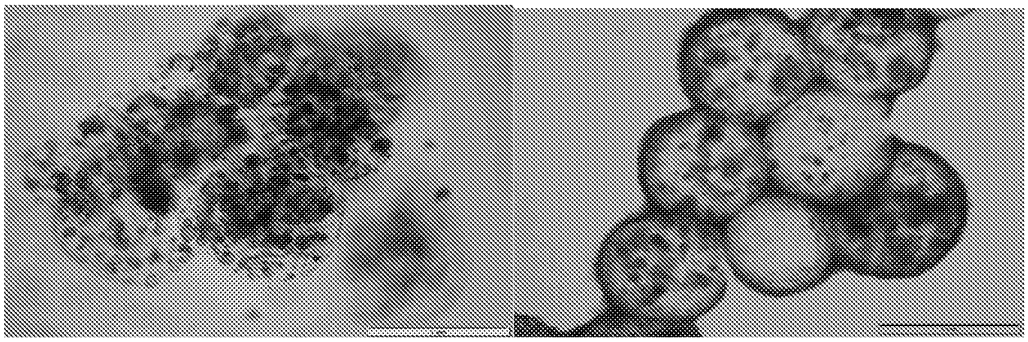


Fig.10

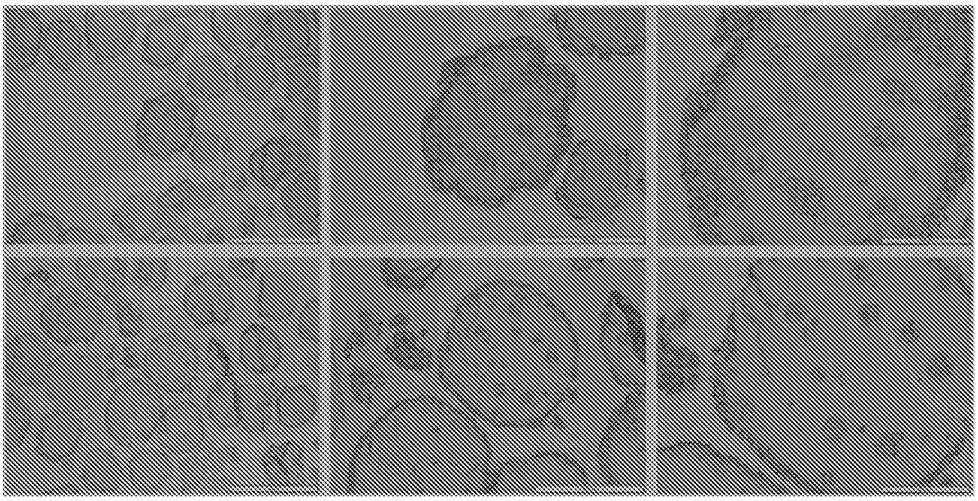


Fig. 11

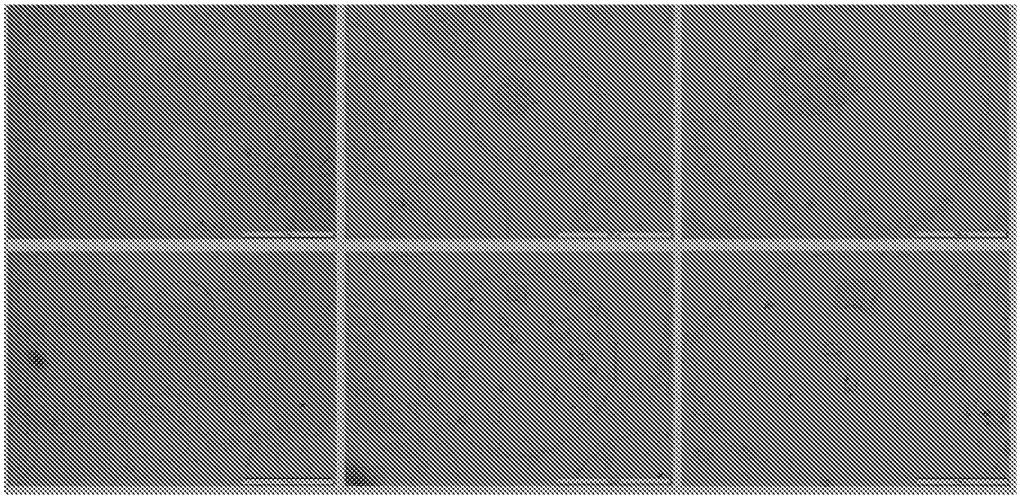


Fig. 12

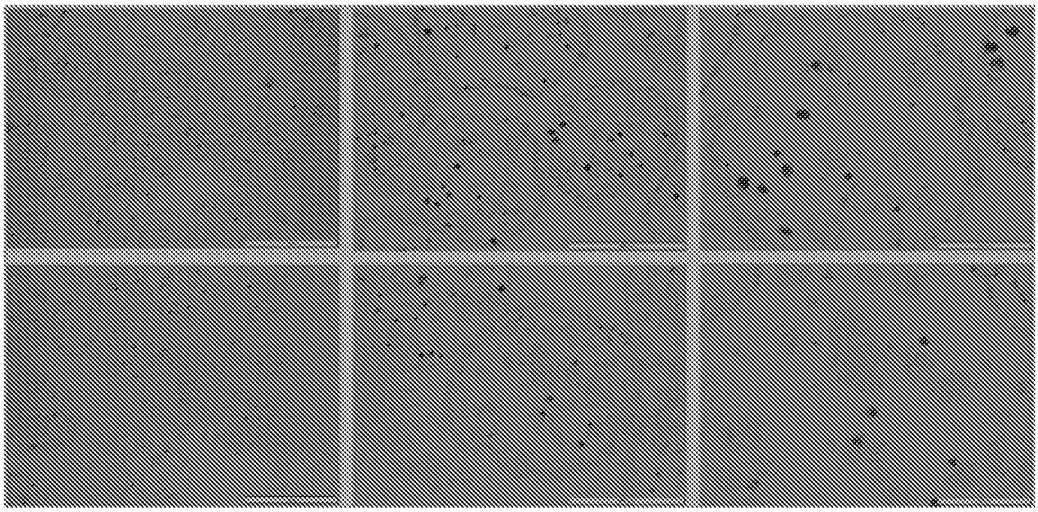


Fig. 13

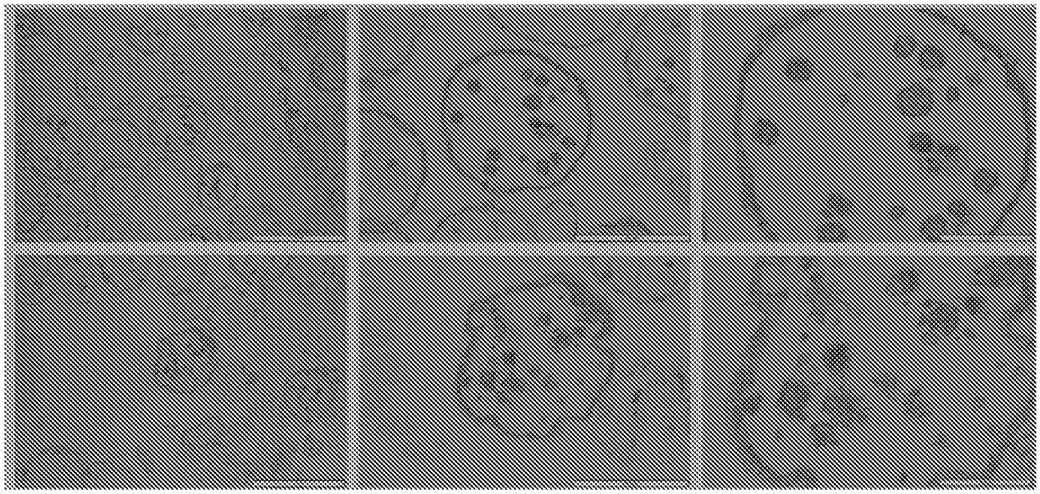


Fig. 14

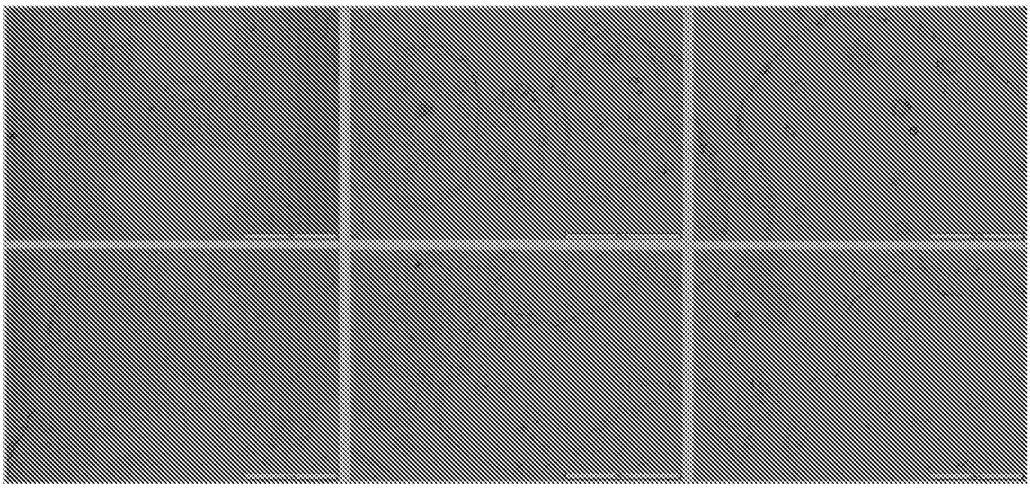


Fig.15

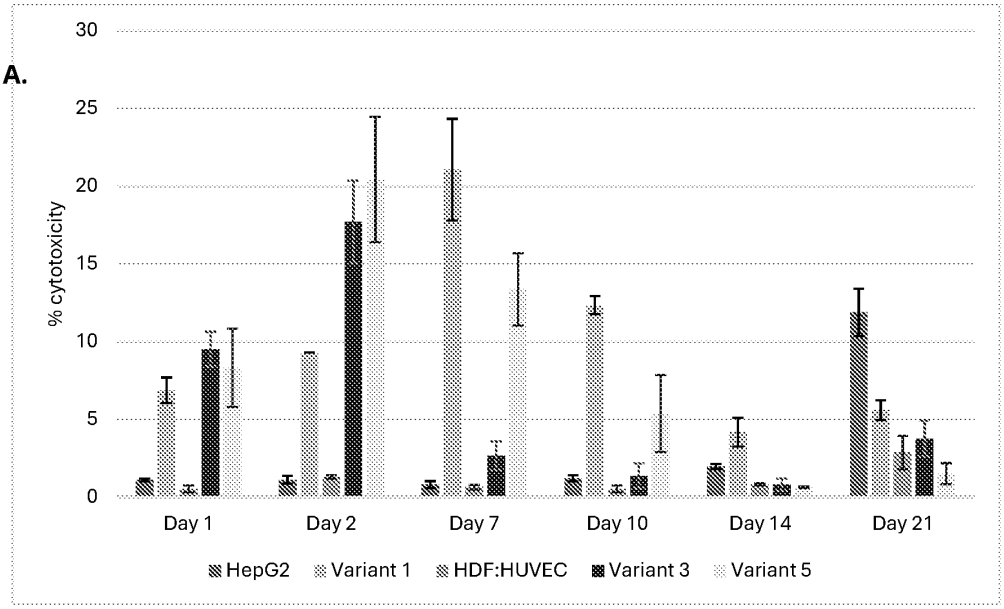

A.
30
25
20
15
10
5
0
% cytotoxicity
Day 1
Day 2
Day 7
Day 10
Day 14
Day 21
HepG2
Variant 1
HDF:HUVEC
Variant 3
Variant 5

Fig.16

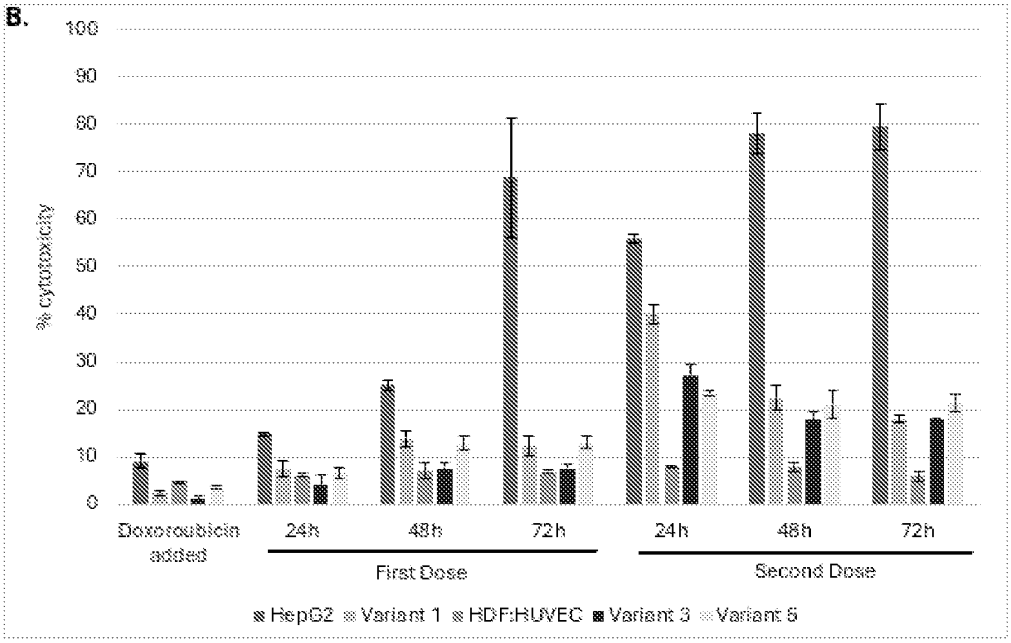

B.
100
90
80
70
60
50
40
30
20
10
0
% cytotoxicity
Doxorubicin added
24h
48h
72h
24h
48h
72h
First Dose
Second Dose
HepG2
Variant 1
HDF:HUVEC
Variant 3
Variant 5

Fig. 17

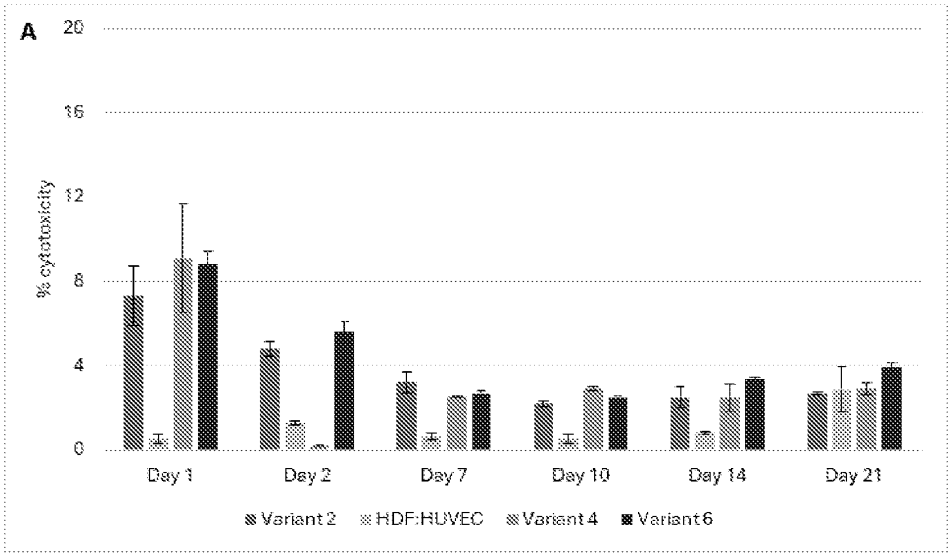

A
20
16
12
8
4
0
% cytotoxicity
Day 1
Day 2
Day 7
Day 10
Day 14
Day 21
Variant 2
HDF:HUVEC
Variant 4
Variant 6

Fig. 18

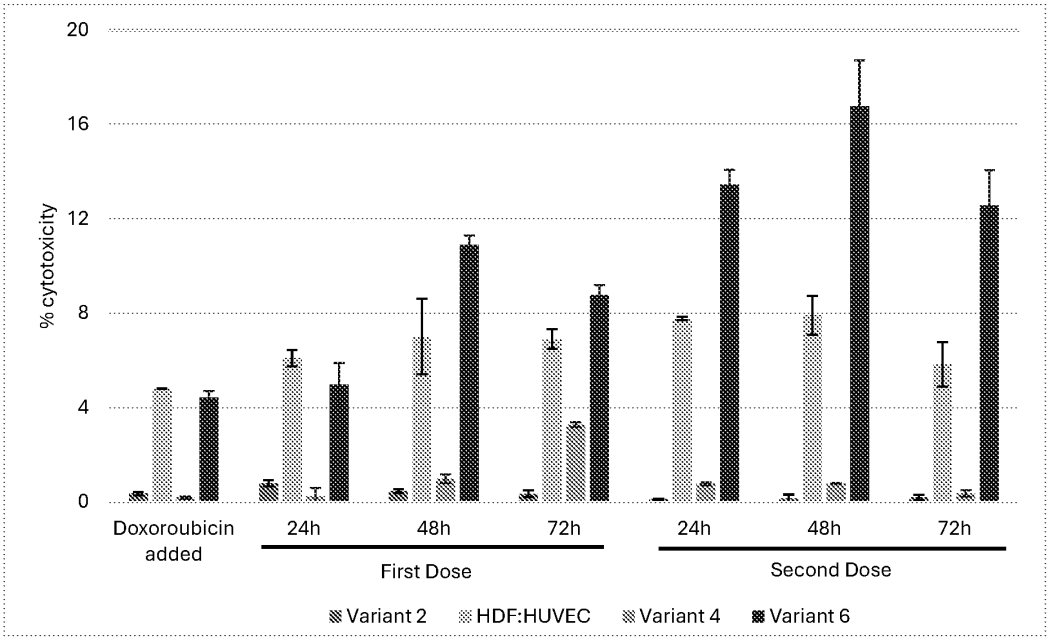
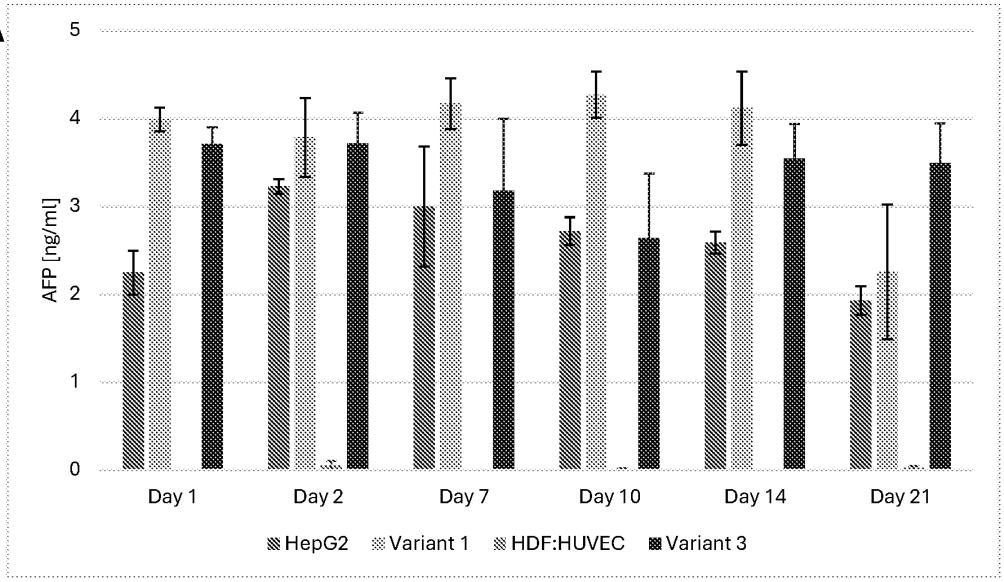

20
16
12
8
4
0
% cytotoxicity
Doxoroubicin added
24h
48h
72h
24h
48h
72h
First Dose
Second Dose
Variant 2
HDF:HUVEC
Variant 4
Variant 6

Fig. 19

A


5
4
3
2
1
0
AFP [ng/ml]
Day 1
Day 2
Day 7
Day 10
Day 14
Day 21
HepG2
Variant 1
HDF:HUVEC
Variant 3

B.

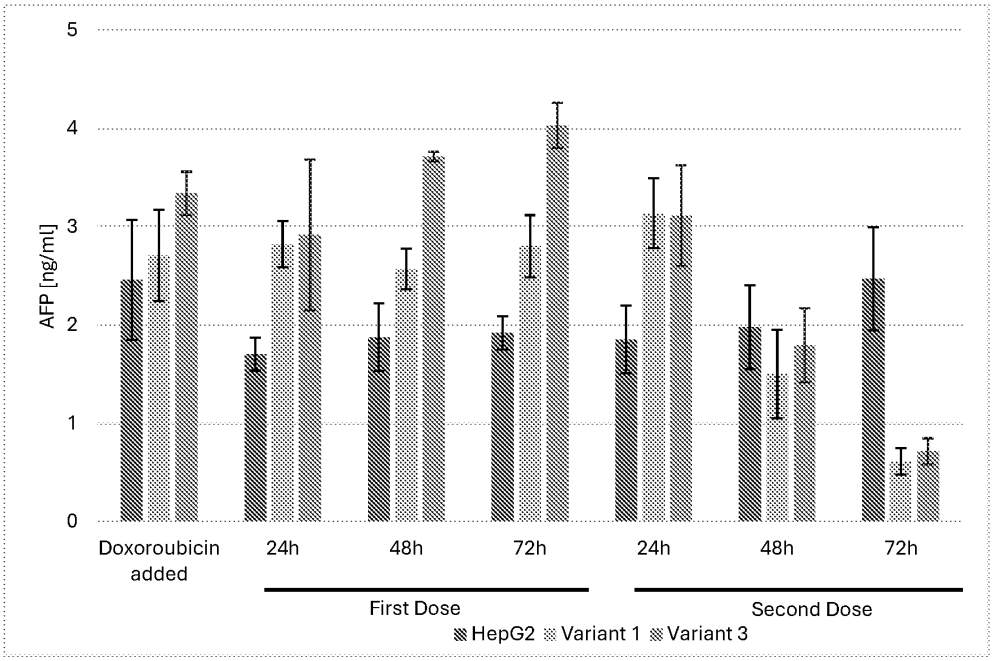

5
4
3
2
1
0
AFP [ng/ml]
Doxoroubicin added
24h
48h
72h
24h
48h
72h
First Dose
Second Dose
HepG2
Variant 1
Variant 3

Fig. 20

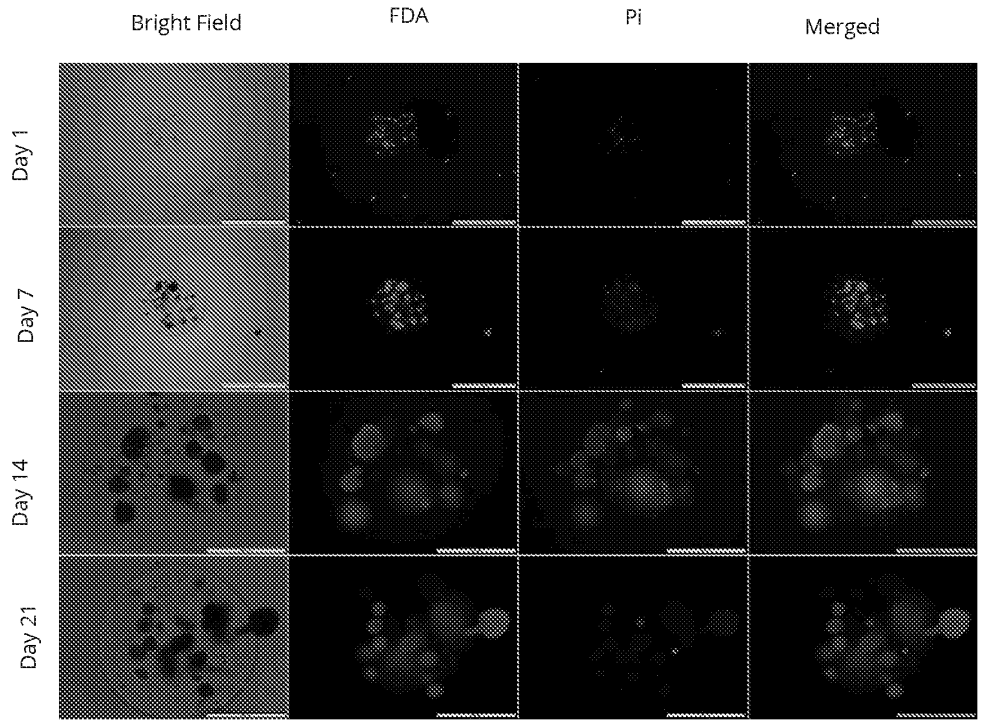

Bright Field
FDA
Pi
Merged
Day 1
Day 7
Day 14
Day 21

Fig.21

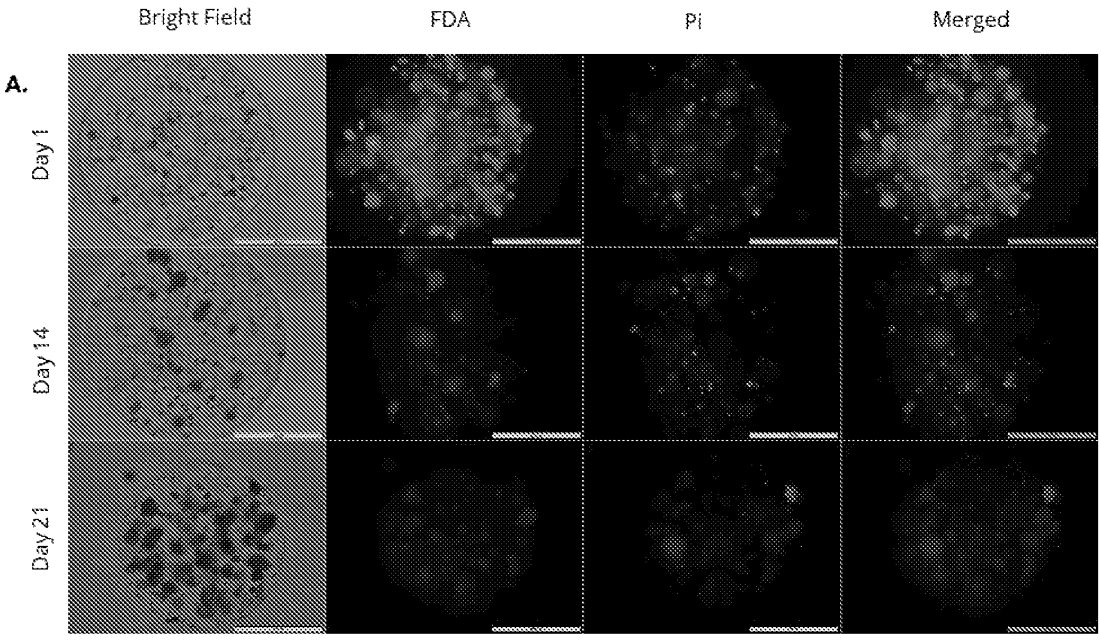

A.
Bright Field
FDA
Pi
Merged
Day 1
Day 14
Day 21

Fig. 22

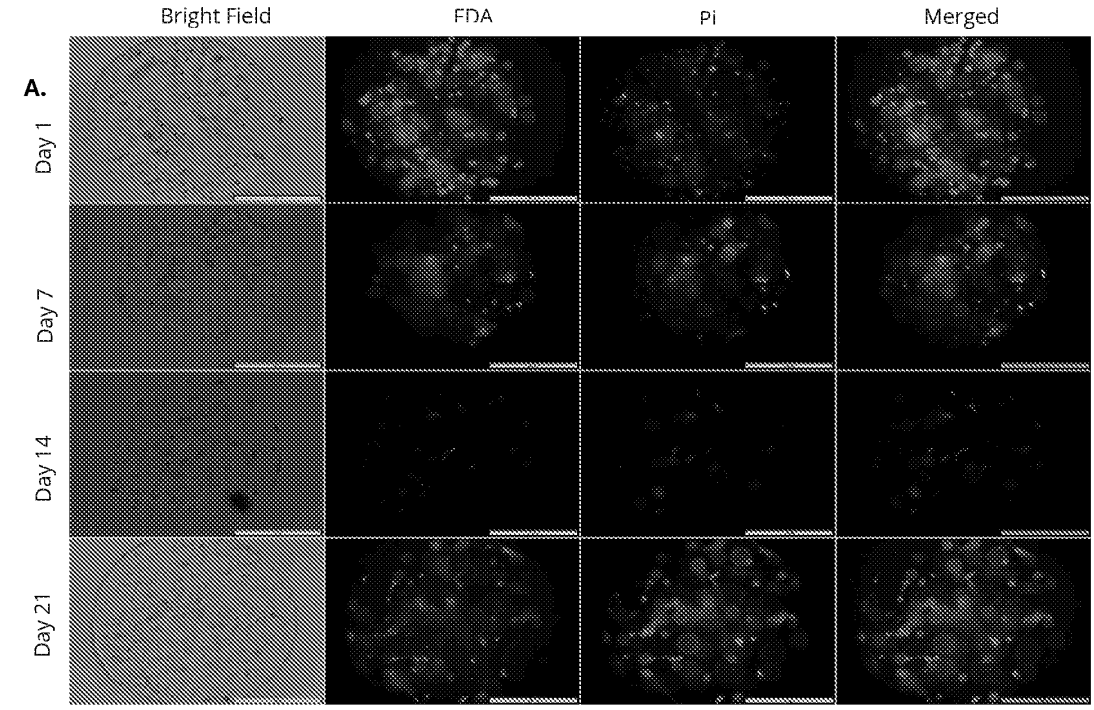

Bright Field
FDA
PI
Merged
A.
Day 1
Day 7
Day 14
Day 21

Fig.23

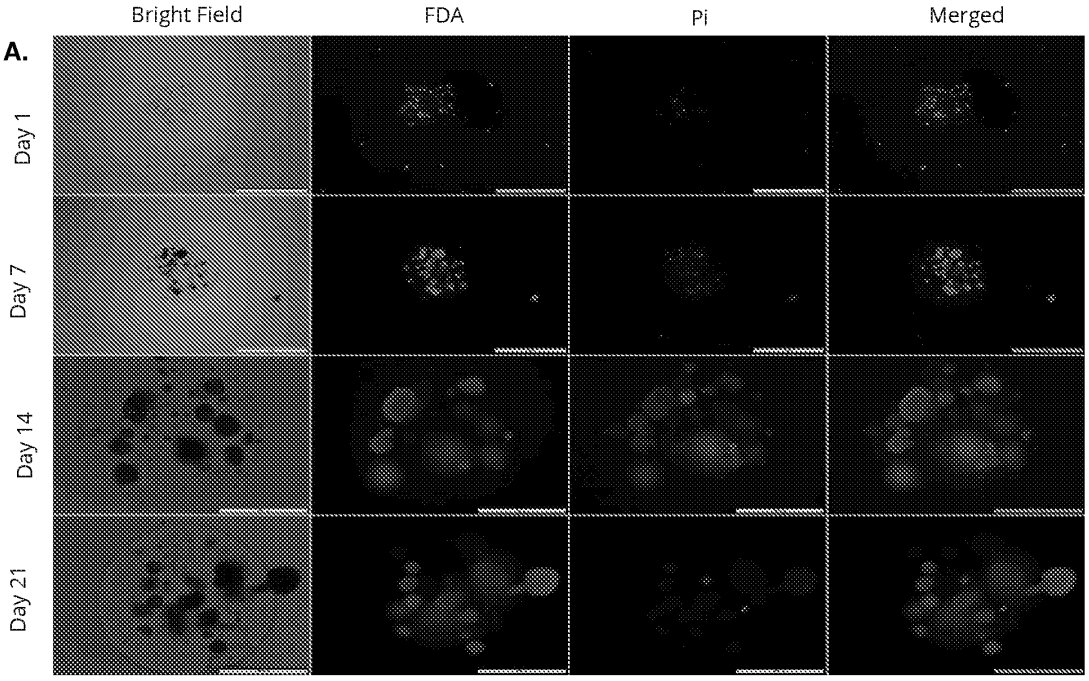

Bright Field
FDA
PI
Merged
A.
Day 1
Day 7
Day 14
Day 21

Fig. 24

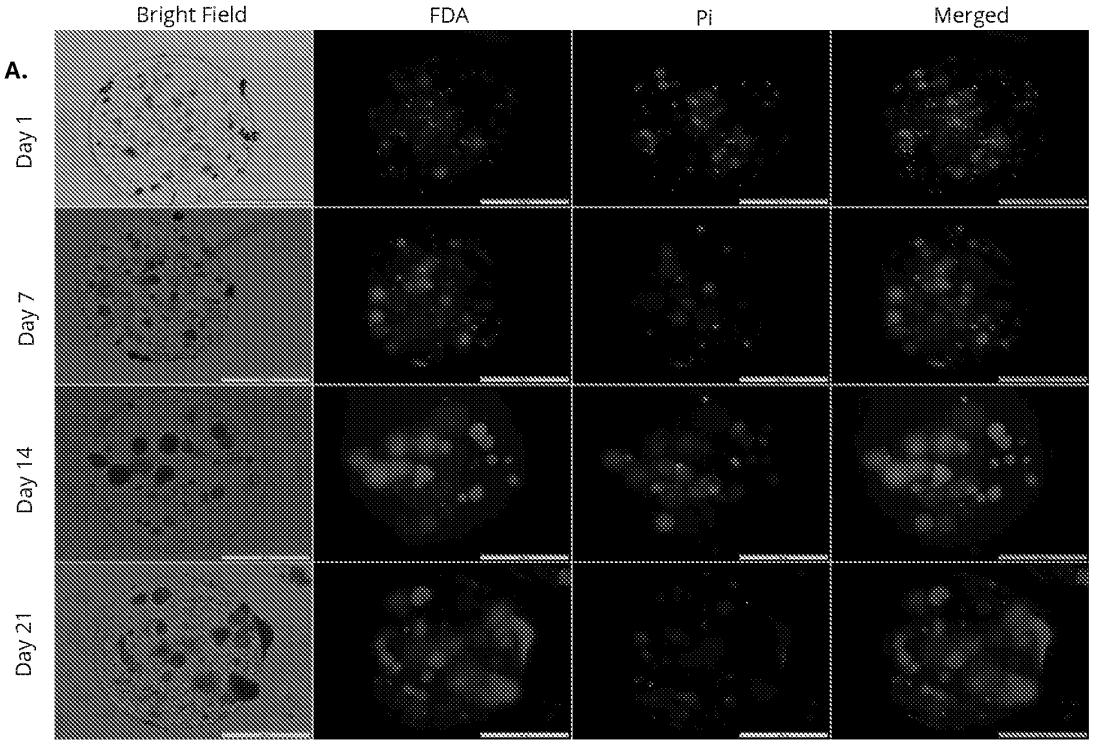


Fig. 25