FIG. 1

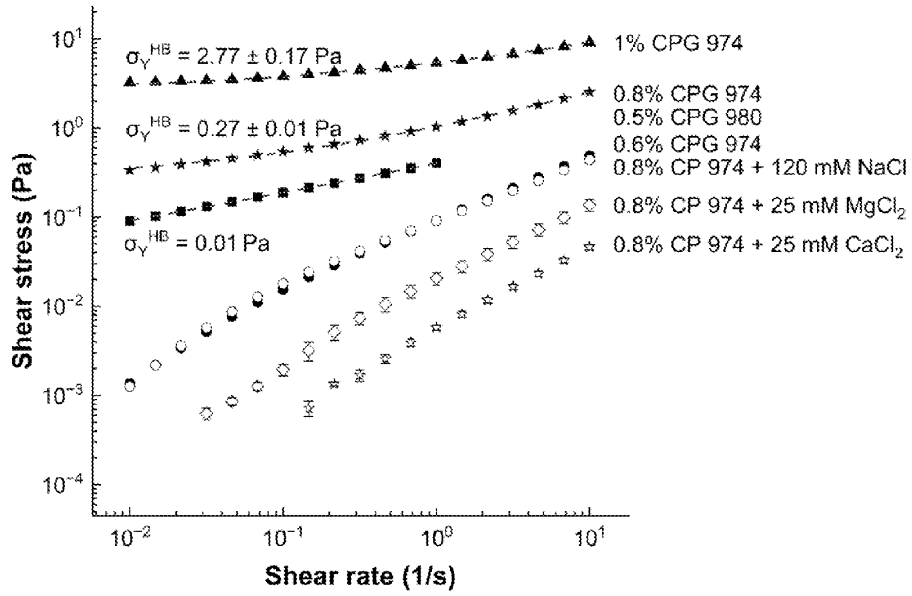

σ_Y^{HB} = 2.77 ± 0.17 Pa
σ_Y^{HB} = 0.27 ± 0.01 Pa
σ_Y^{HB} = 0.01 Pa
1% CPG 974
0.8% CPG 974
0.5% CPG 980
0.6% CPG 974
0.8% CP 974 + 120 mM NaCl
0.8% CP 974 + 25 mM $MgCl_2$
0.8% CP 974 + 25 mM $CaCl_2$
Shear stress (Pa)
Shear rate (1/s)

FIG. 2

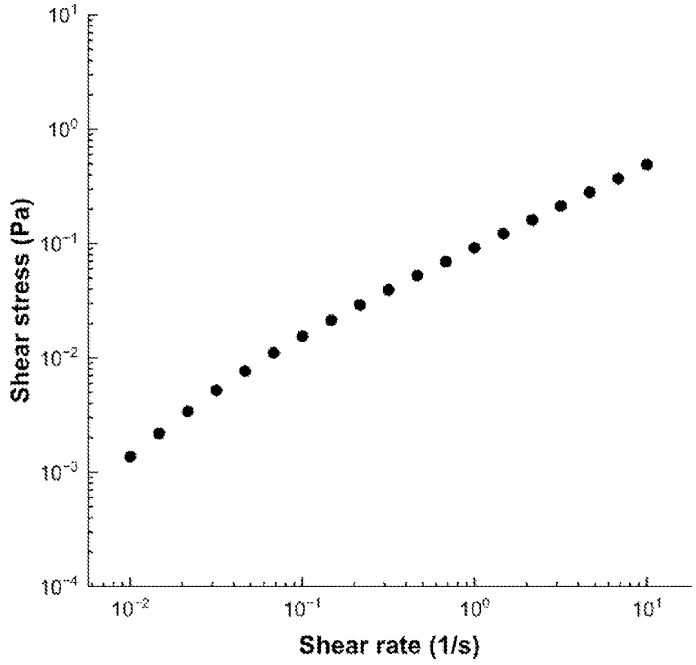

Shear stress (Pa)
Shear rate (1/s)

FIG. 3

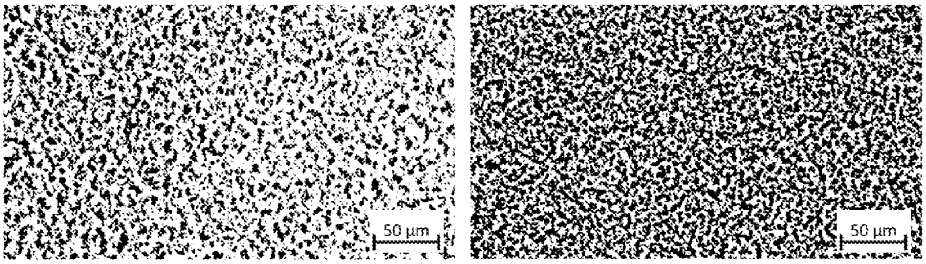


FIG. 4A

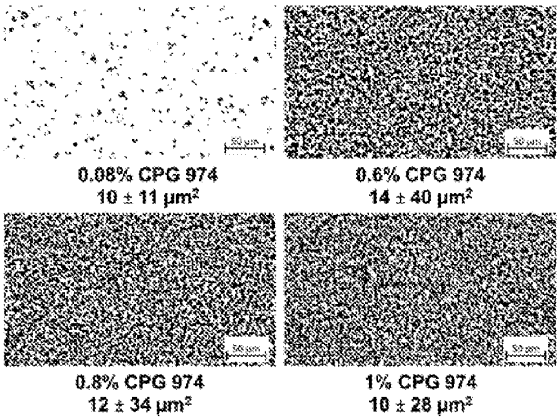


FIG. 4B

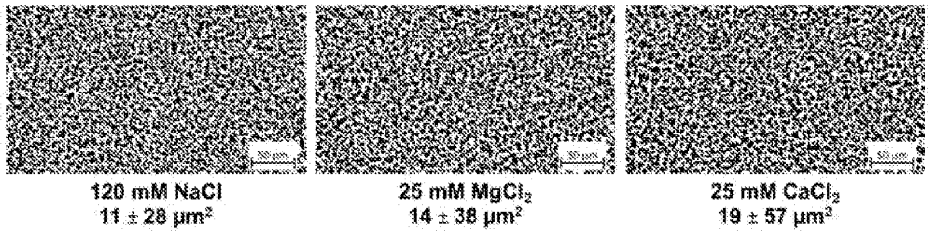


FIG. 5

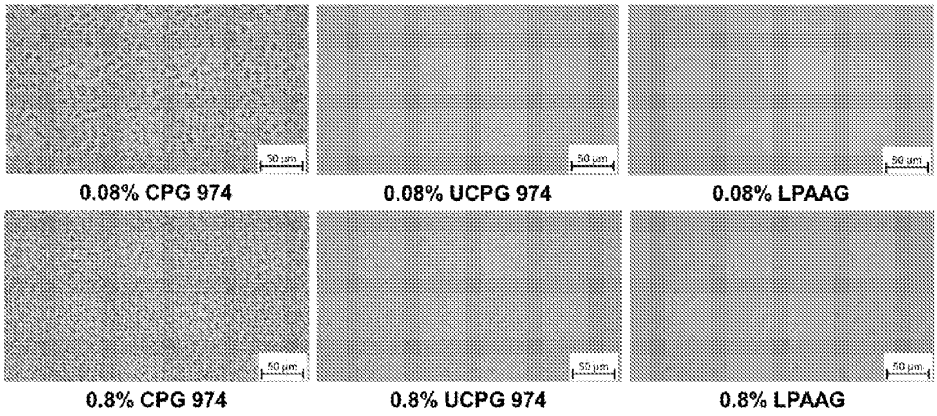


FIG. 6A

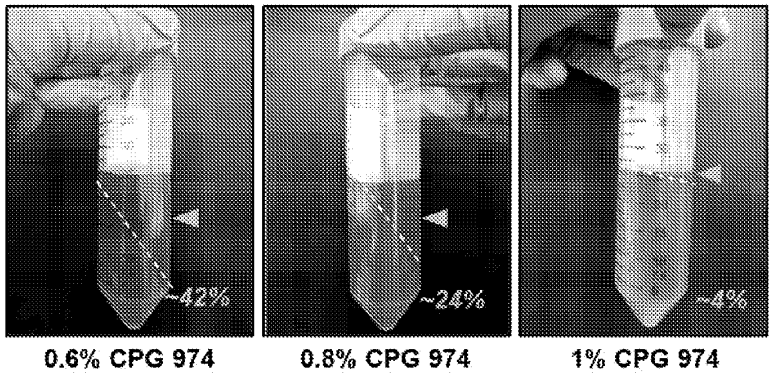


FIG. 6B

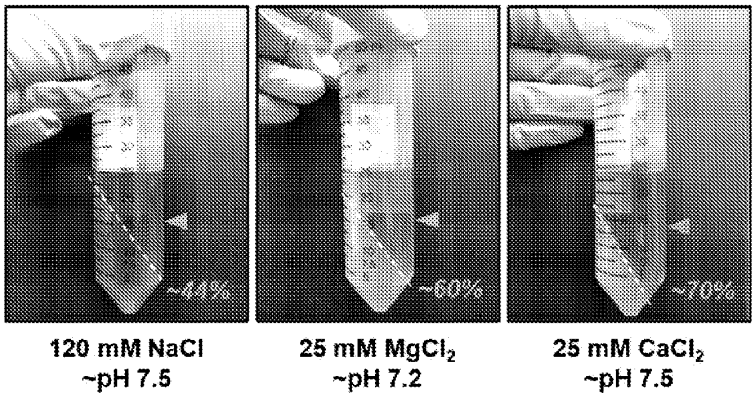


FIG. 7

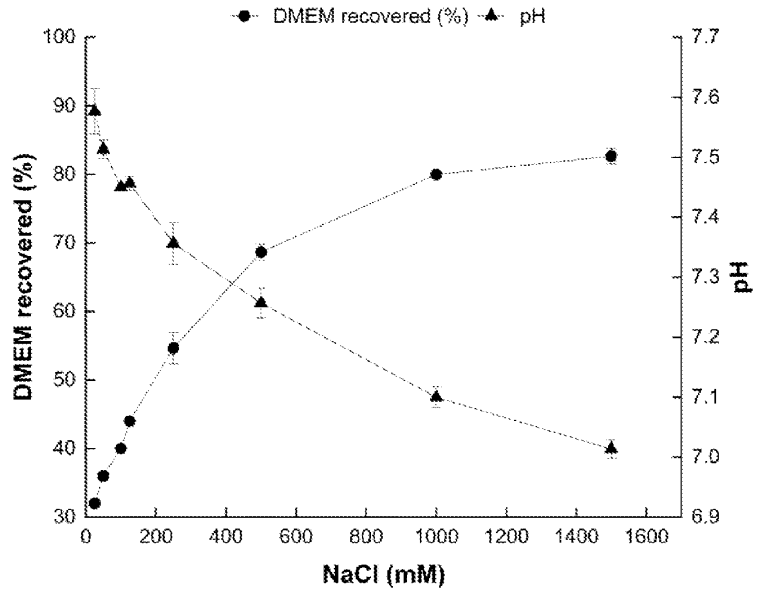

DMEM recovered (%)
pH
DMEM recovered (%)
pH
NaCl (mM)
100
90
80
70
60
50
40
30
7.7
7.6
7.5
7.4
7.3
7.2
7.1
7.0
6.9
0
200
400
600
800
1000
1200
1400
1600

FIG. 8

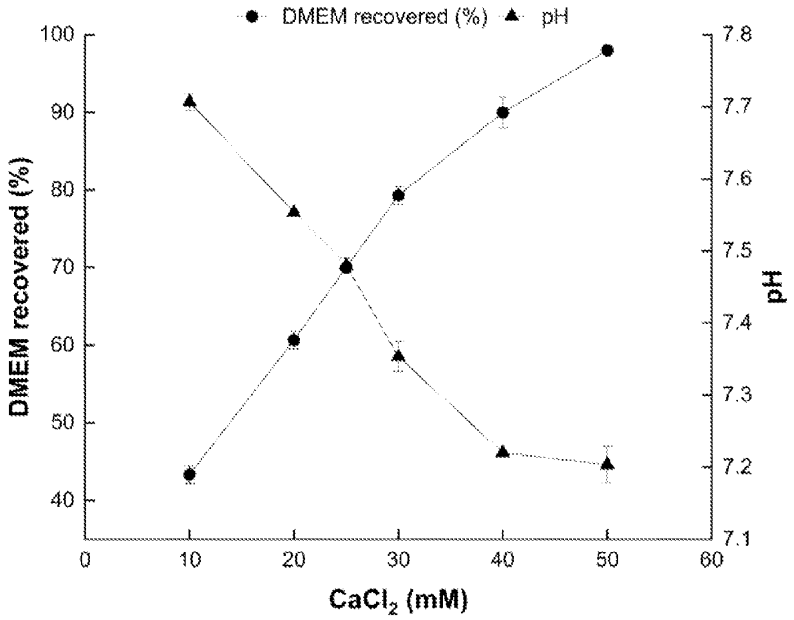

DMEM recovered (%)
pH
DMEM recovered (%)
pH
CaCl2 (mM)
100
90
80
70
60
50
40
7.8
7.7
7.6
7.5
7.4
7.3
7.2
7.1
0
10
20
30
40
50
60

FIG. 9

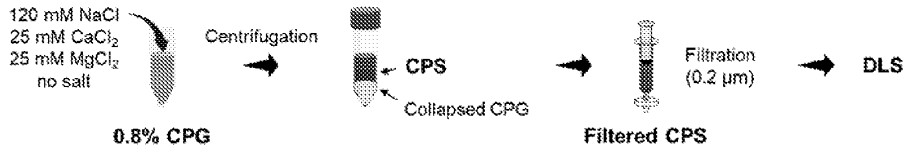

120 mM NaCl
25 mM $CaCl_2$
25 mM $MgCl_2$
no salt
Centrifugation
CPS
Collapsed CPG
Filtration
(0.2 µm)
DLS
0.8% CPG
Filtered CPS

FIG. 10

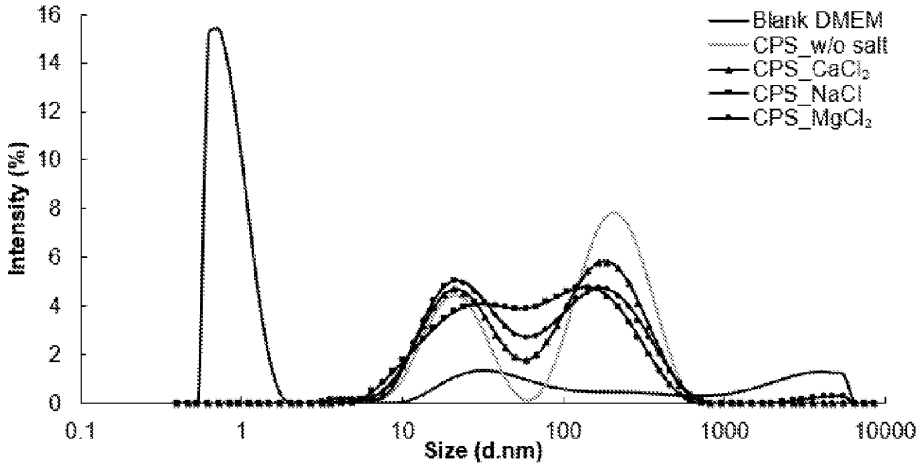

Blank DMEM
CPS_w/o salt
CPS_$CaCl_2$
CPS_NaCl
CPS_$MgCl_2$
Intensity (%)
Size (d.nm)
0
2
4
6
8
10
12
14
16
0.1
1
10
100
1000
10000

FIG. 11

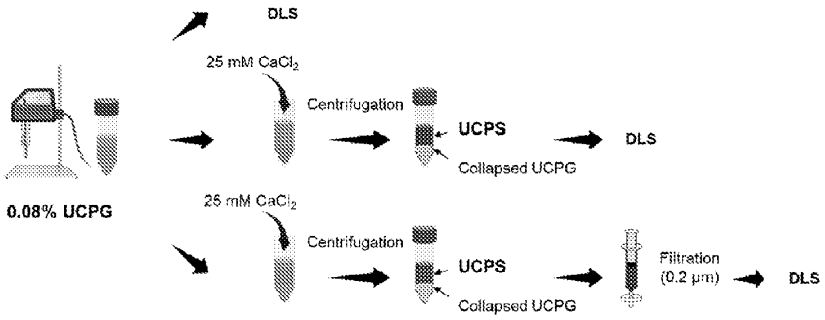


FIG. 12

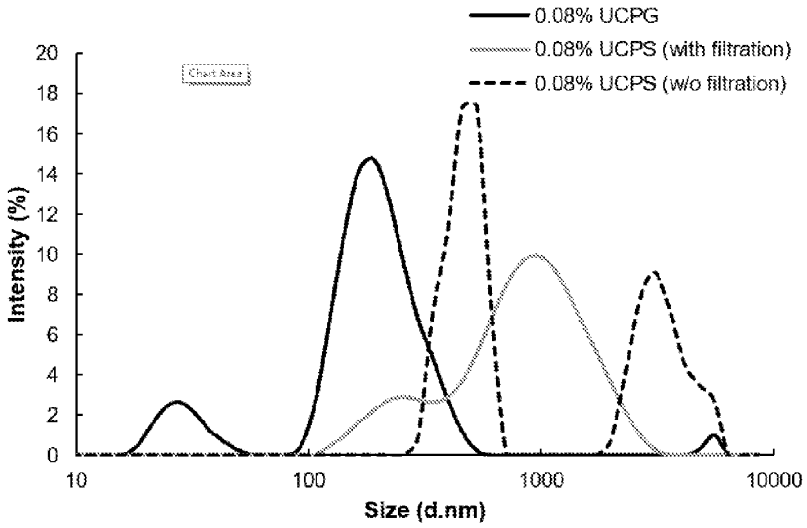


FIG. 13

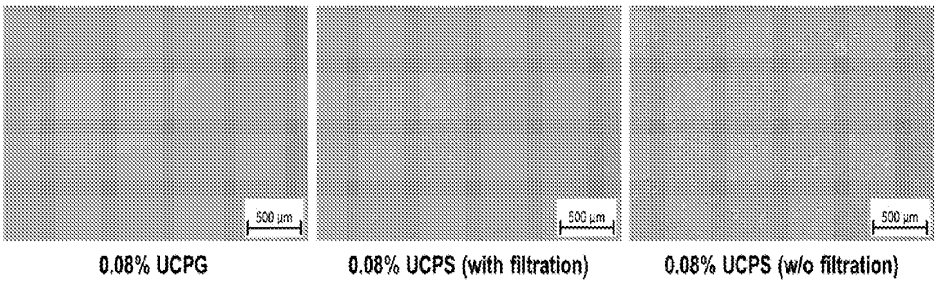


FIG. 14

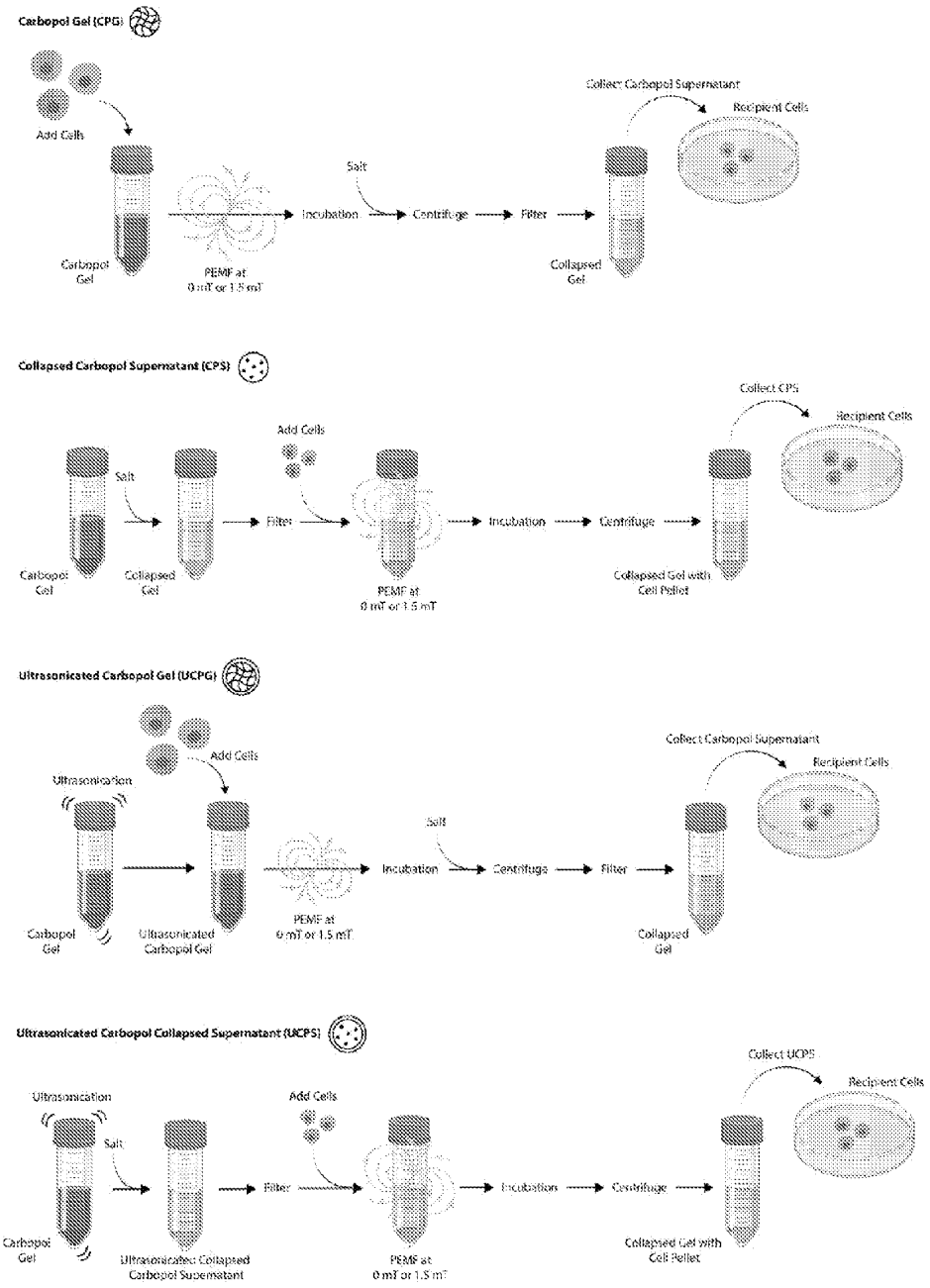

Carbopol Gel (CPG)
Add Cells
Carbopol Gel
PEMF at 0 mT or 1.5 mT
Incubation
Salt
Centrifuge
Filter
Collect Carbopol Supernatant
Recipient Cells
Collapsed Gel
Collapsed Carbopol Supernatant (CPS)
Salt
Carbopol Gel
Collapsed Gel
Filter
Add Cells
PEMF at 0 mT or 1.5 mT
Incubation
Centrifuge
Collapsed Gel with Cell Pellet
Collect CPS
Recipient Cells
Ultrasonicated Carbopol Gel (UCPG)
Ultrasonication
Add Cells
Carbopol Gel
Ultrasonicated Carbopol Gel
PEMF at 0 mT or 1.5 mT
Incubation
Salt
Centrifuge
Filter
Collapsed Gel
Collect Carbopol Supernatant
Recipient Cells
Ultrasonicated Carbopol Collapsed Supernatant (UCPS)
Ultrasonication
Salt
Carbopol Gel
Ultrasonicated Collapsed Carbopol Supernatant
Filter
Add Cells
PEMF at 0 mT or 1.5 mT
Incubation
Centrifuge
Collapsed Gel with Cell Pellet
Collect UCPS
Recipient Cells

FIG. 15

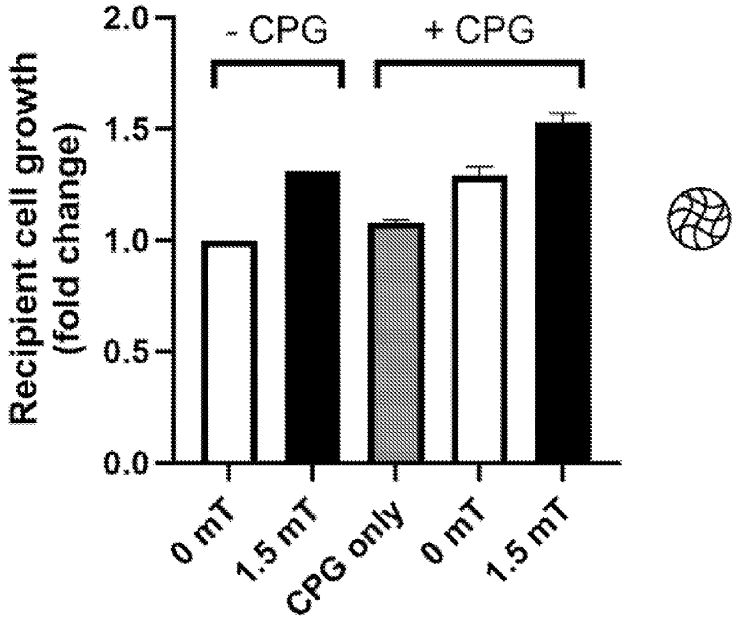

- CPG
+ CPG
Recipient cell growth (fold change)
2.0
1.5
1.0
0.5
0.0
0 mT
1.5 mT
CPG only
0 mT
1.5 mT

FIG. 16A

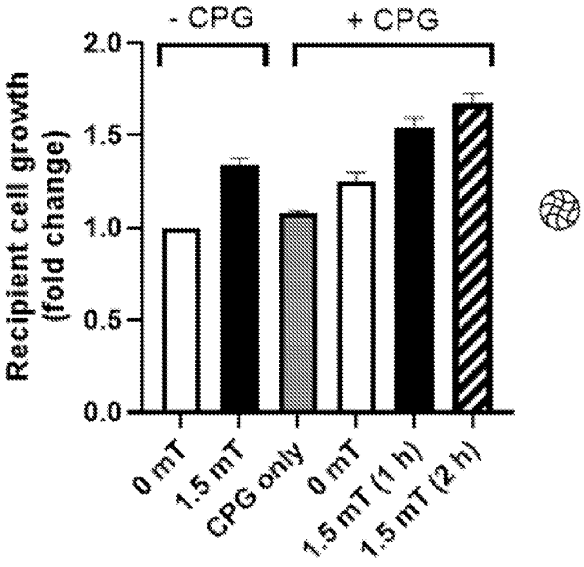


FIG. 16B

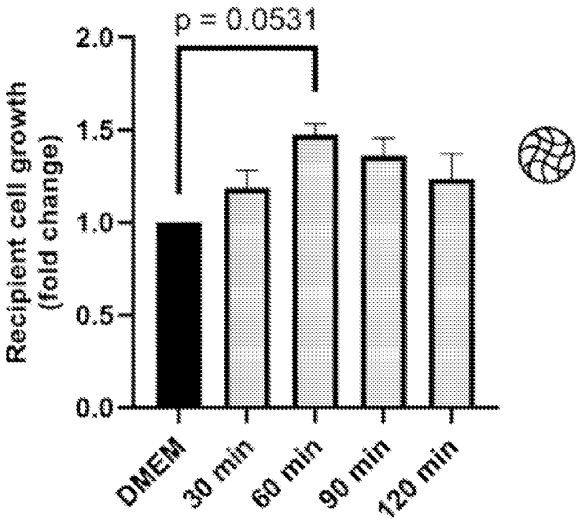


FIG. 17A

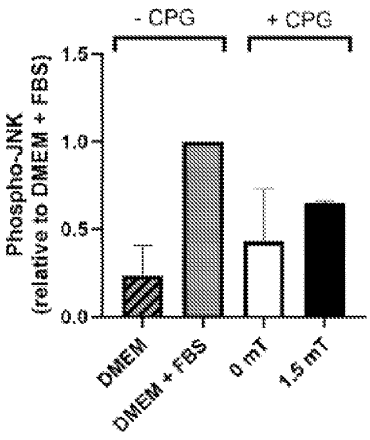


FIG. 17B

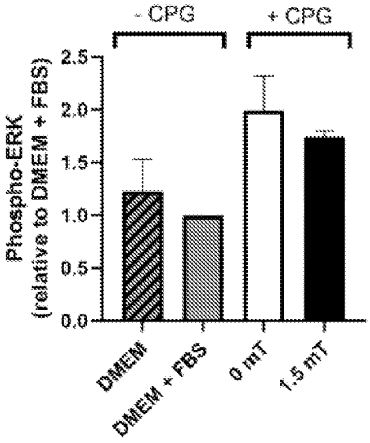


FIG. 17C

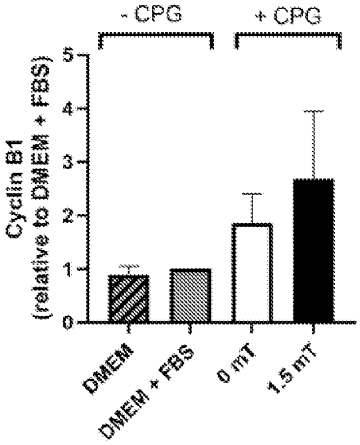


FIG. 17D

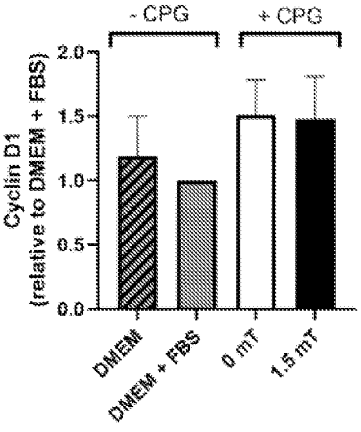


FIG. 18

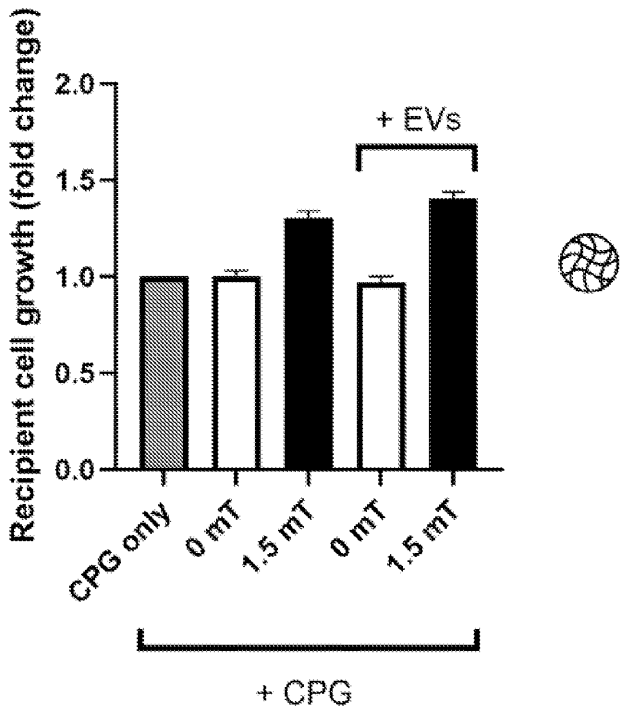

Recipient cell growth (foid change)
2.0
1.5
1.0
0.5
0.0
+ EVs
CPG only
0 mT
1.5 mT
0 mT
1.5 mT
+ CPG

FIG. 19A

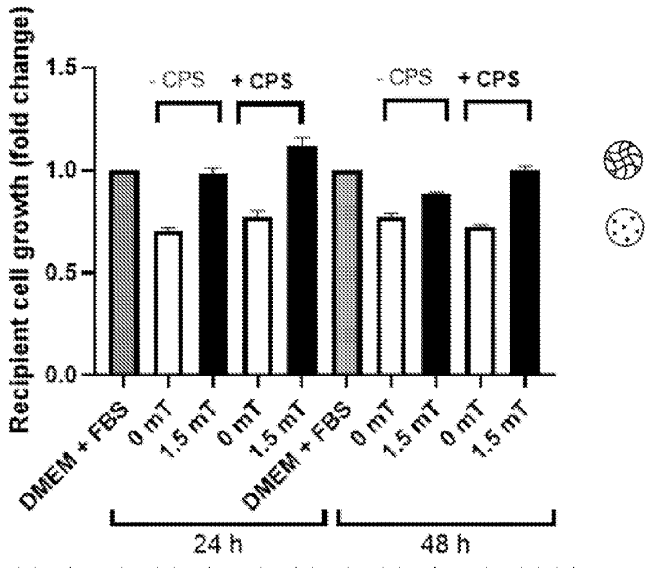


FIG. 19B

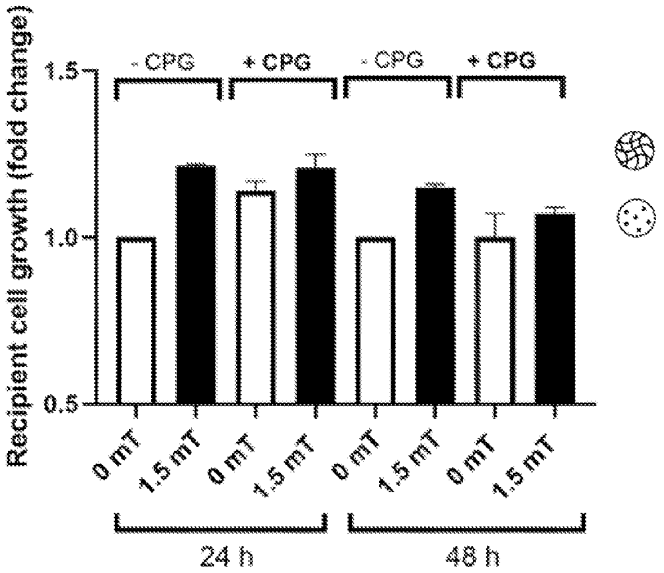


FIG. 20

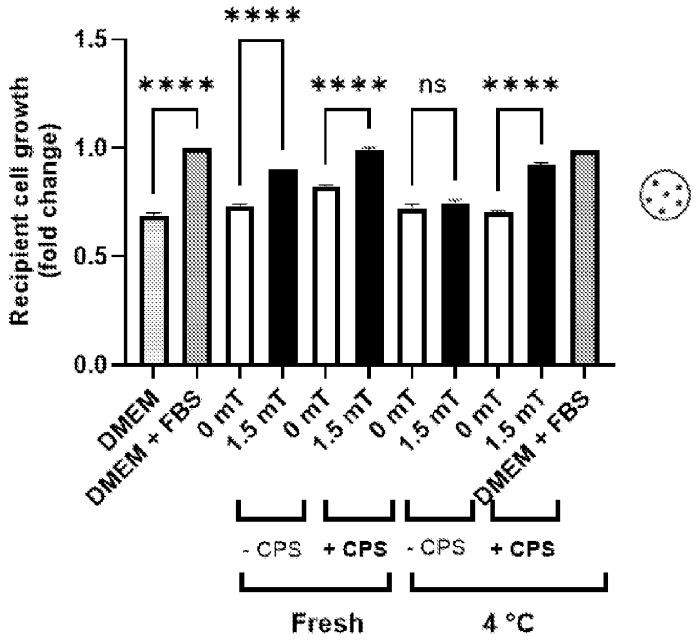

Recipient cell growth (fold change)
1.5
1.0
0.5
0.0
****
****
****
ns
****
DMEM
DMEM + FBS
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
DMEM + FBS
- CPS
+ CPS
- CPS
+ CPS
Fresh
4 °C

FIG. 21

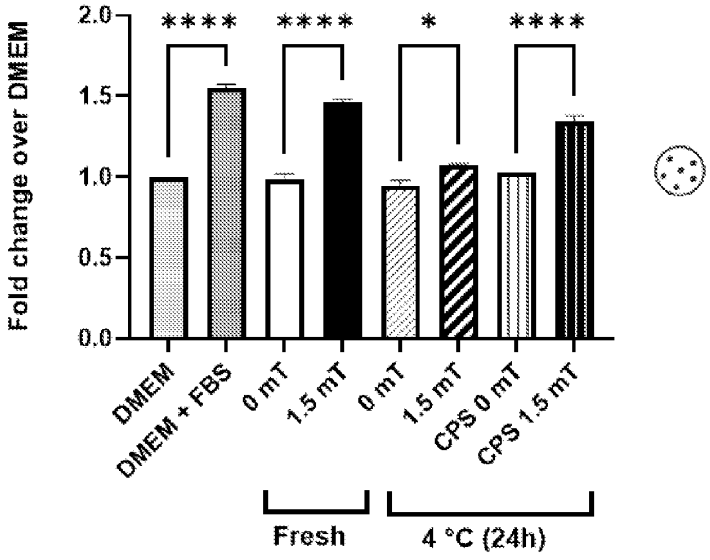

Fold change over DMEM
2.0
1.5
1.0
0.5
0.0
****
****
*
****
DMEM
DMEM + FBS
0 mT
1.5 mT
0 mT
1.5 mT
CPS 0 mT
CPS 1.5 mT
Fresh
4 °C (24h)

FIG. 22

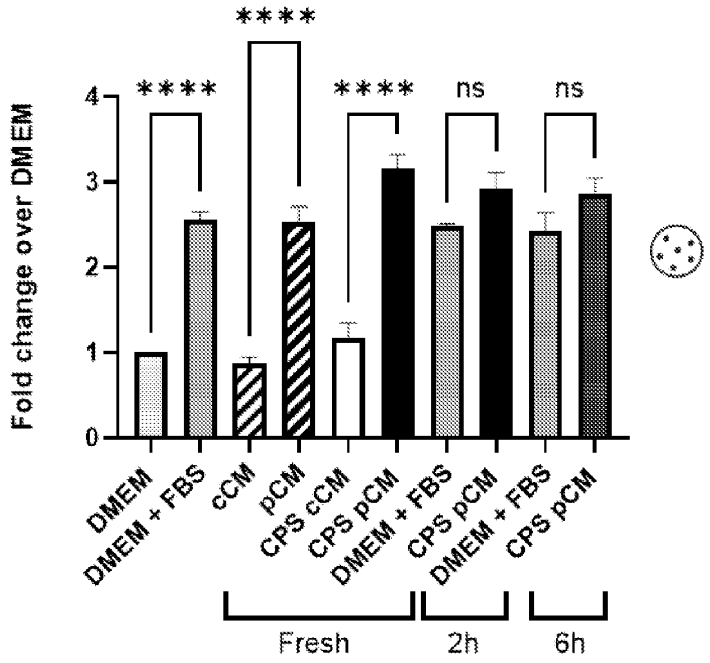

****
****
****
ns
ns
Fold change over DMEM
4
3
2
1
0
DMEM
DMEM + FBS
cCM
pCM
CPS cCM
CPS pCM
DMEM + FBS
CPS pCM
DMEM + FBS
CPS pCM
Fresh
2h
6h

FIG. 23

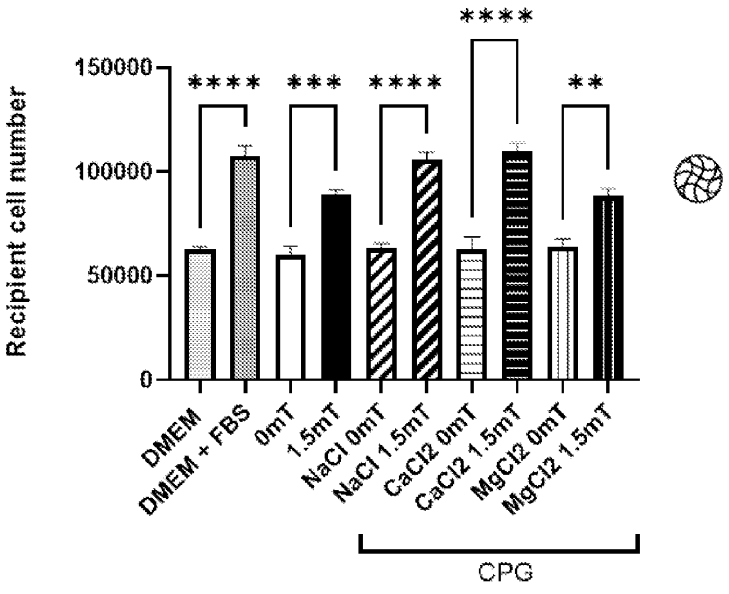

****
****
***
****
**
Recipient cell number
150000
100000
50000
0
DMEM
DMEM + FBS
0mT
1.5mT
NaCl 0mT
NaCl 1.5mT
CaCl2 0mT
CaCl2 1.5mT
MgCl2 0mT
MgCl2 1.5mT
CPG

FIG. 24A

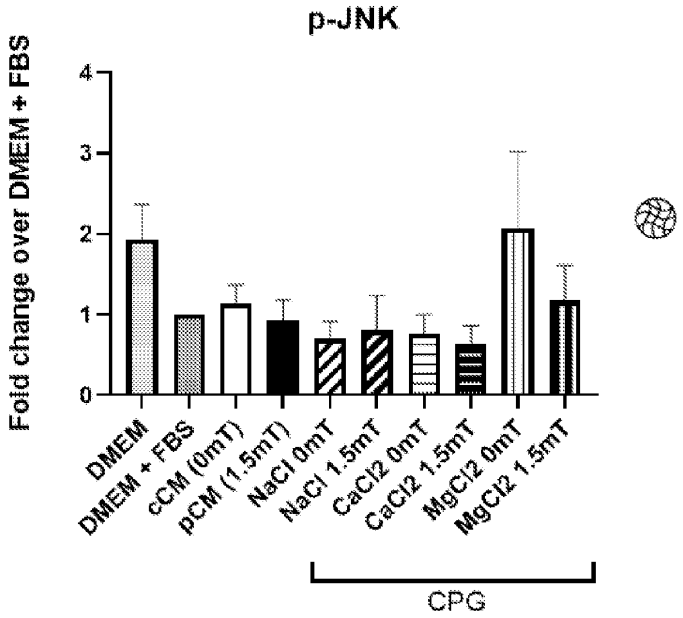


FIG. 24B

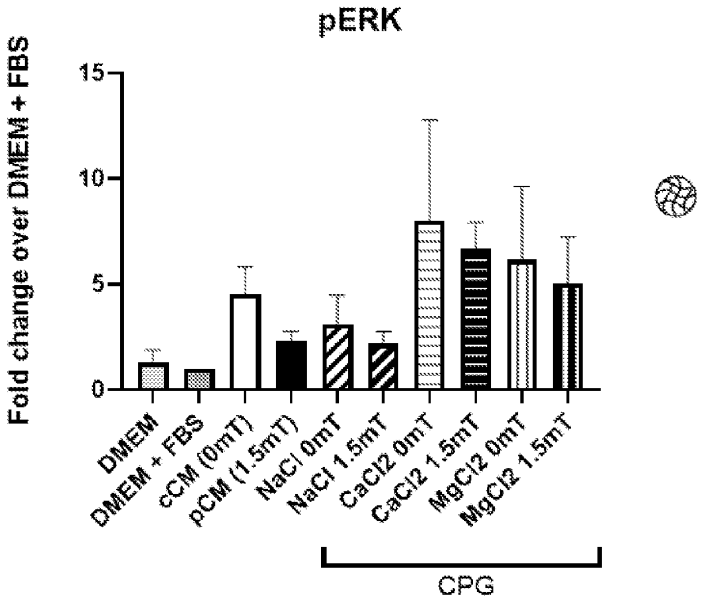


FIG. 24C

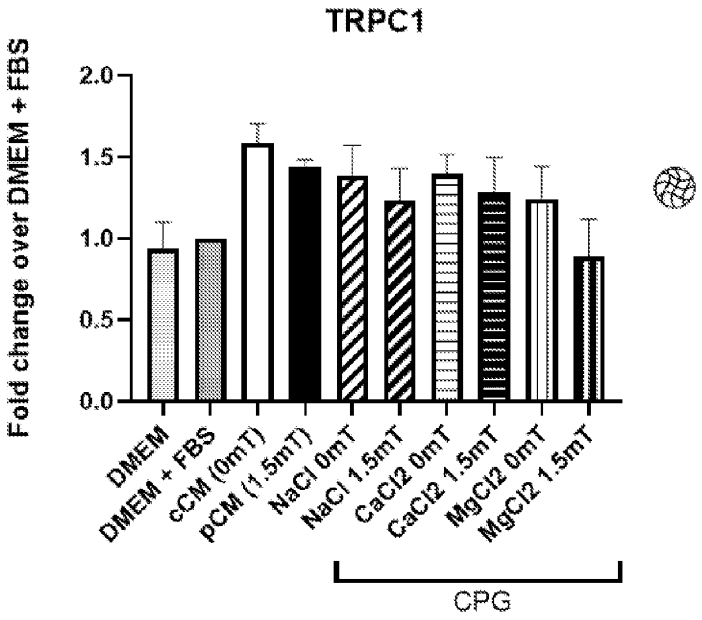


FIG. 24D

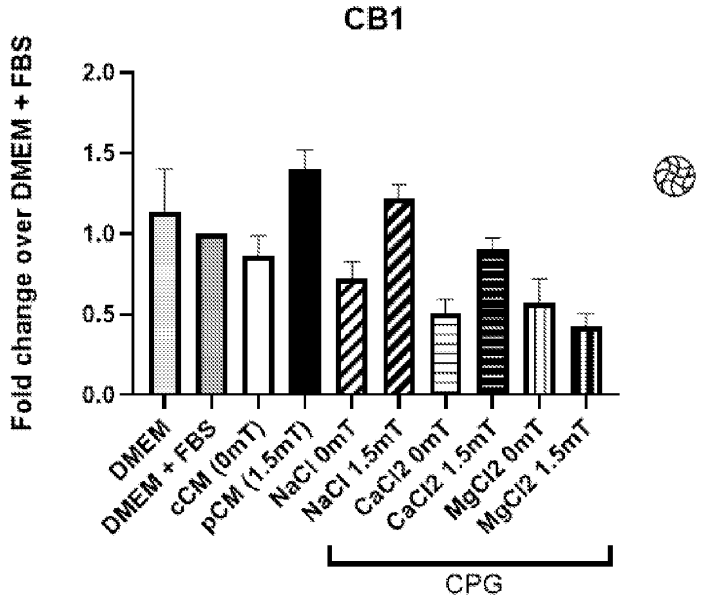


FIG. 24E

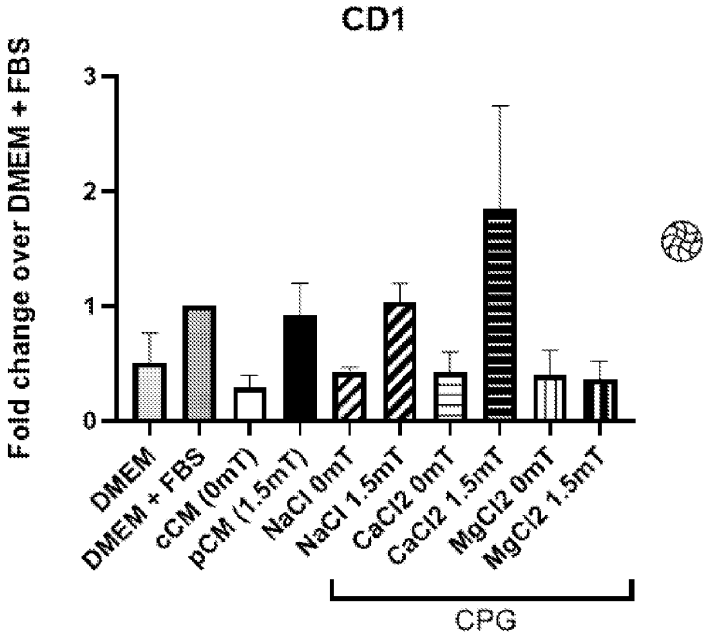


FIG. 24F

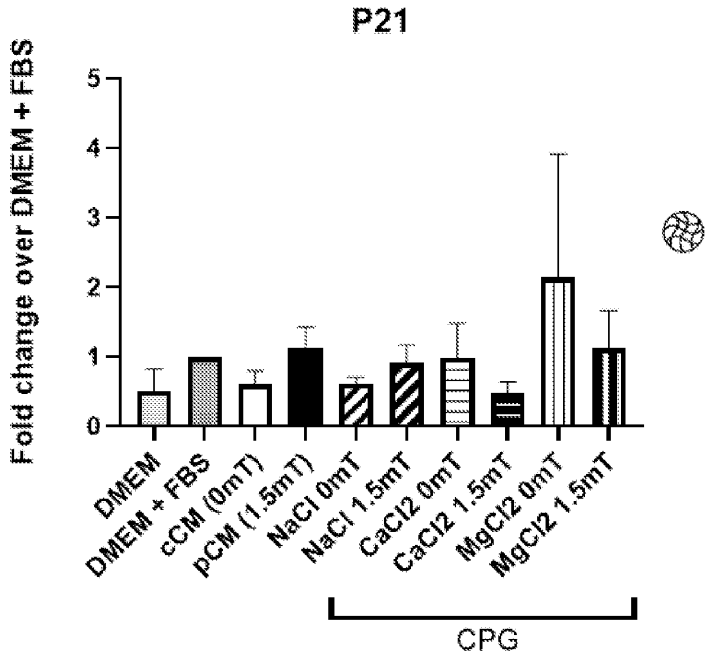


FIG. 25

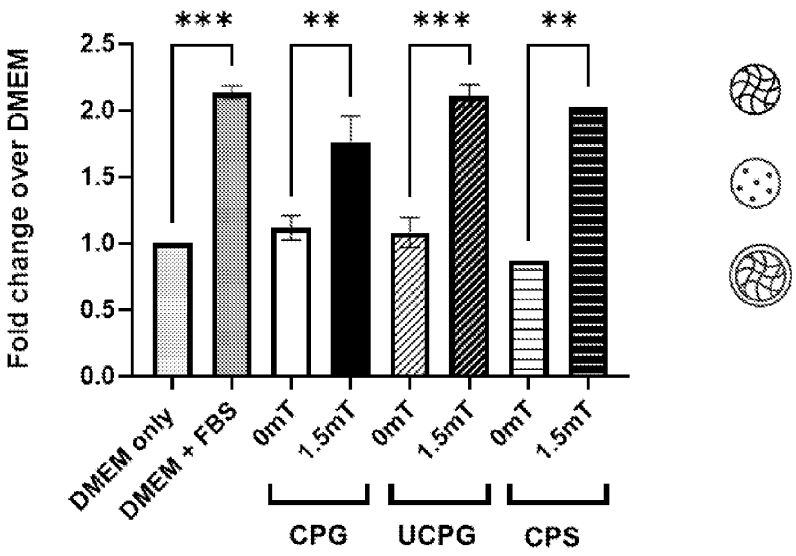

***
**
***
**
Fold change over DMEM
2.5
2.0
1.5
1.0
0.5
0.0
DMEM only
DMEM + FBS
0mT
1.5mT
0mT
1.5mT
0mT
1.5mT
CPG
UCPG
CPS

FIG. 26

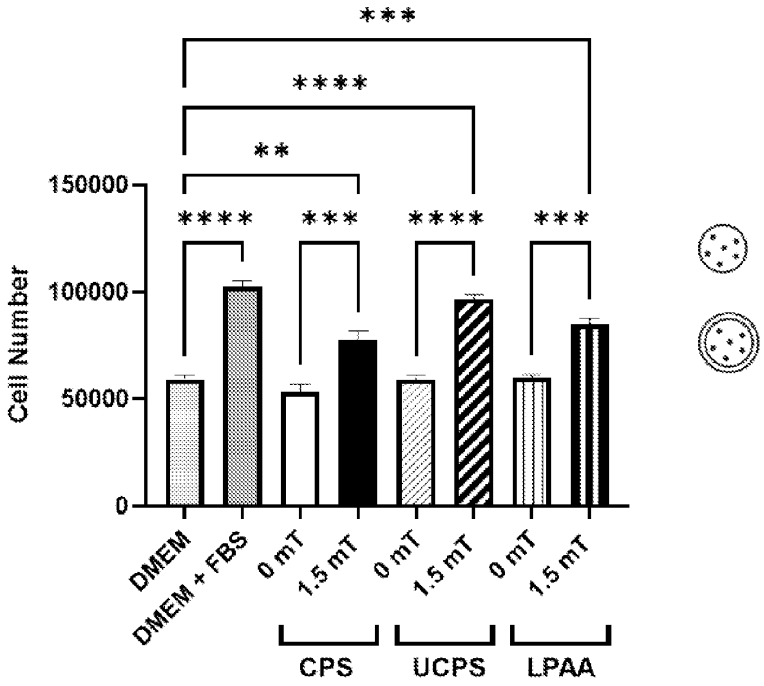

***
****
**
****
***
****
***
Cell Number
150000
100000
50000
0
DMEM
DMEM + FBS
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
CPS
UCPS
LPAA

FIG. 27

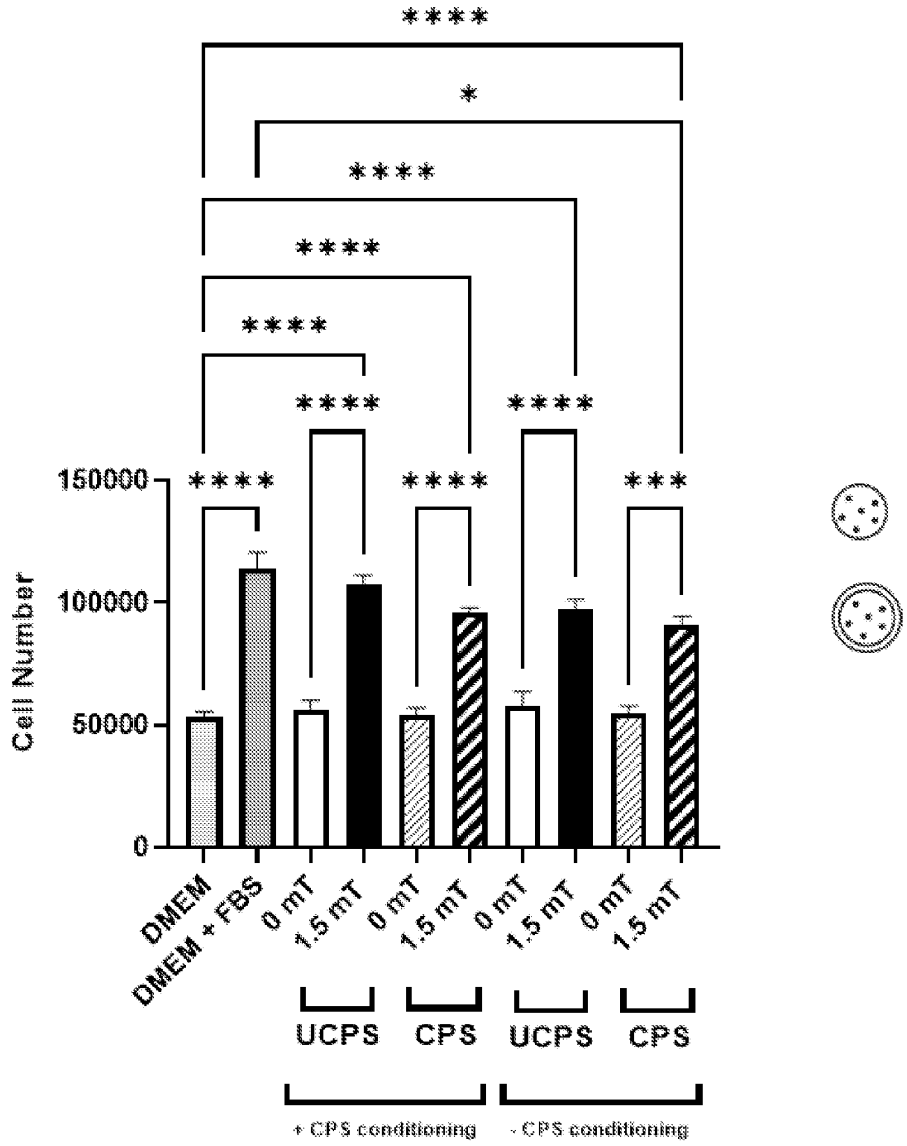

****
*
****
****
****
****
****
****
****
****
***
150000
100000
50000
0
Cell Number
DMEM
DMEM + FBS
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
UCPS
CPS
UCPS
CPS
+ CPS conditioning
- CPS conditioning

FIG. 28

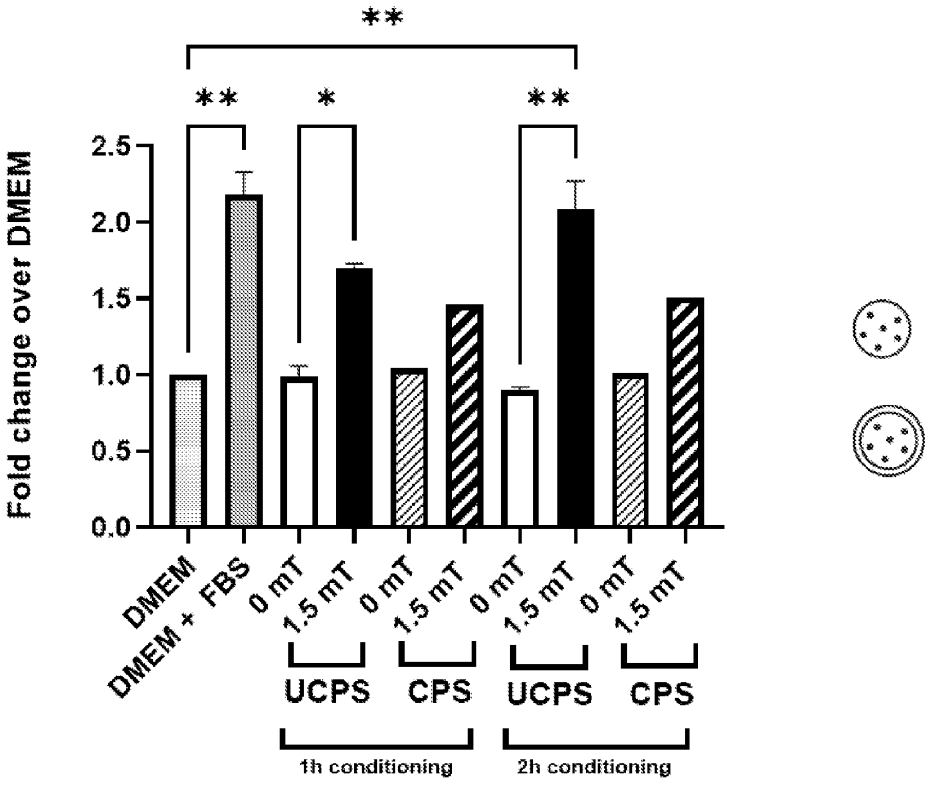

**
**
*
**
Fold change over DMEM
2.5
2.0
1.5
1.0
0.5
0.0
DMEM
DMEM + FBS
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
0 mT
1.5 mT
UCPS
CPS
UCPS
CPS
1h conditioning
2h conditioning

FIG. 29A

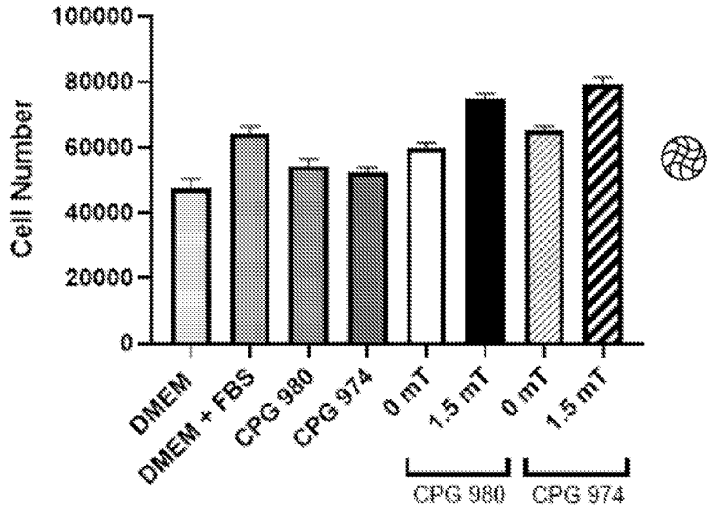


FIG. 29B

