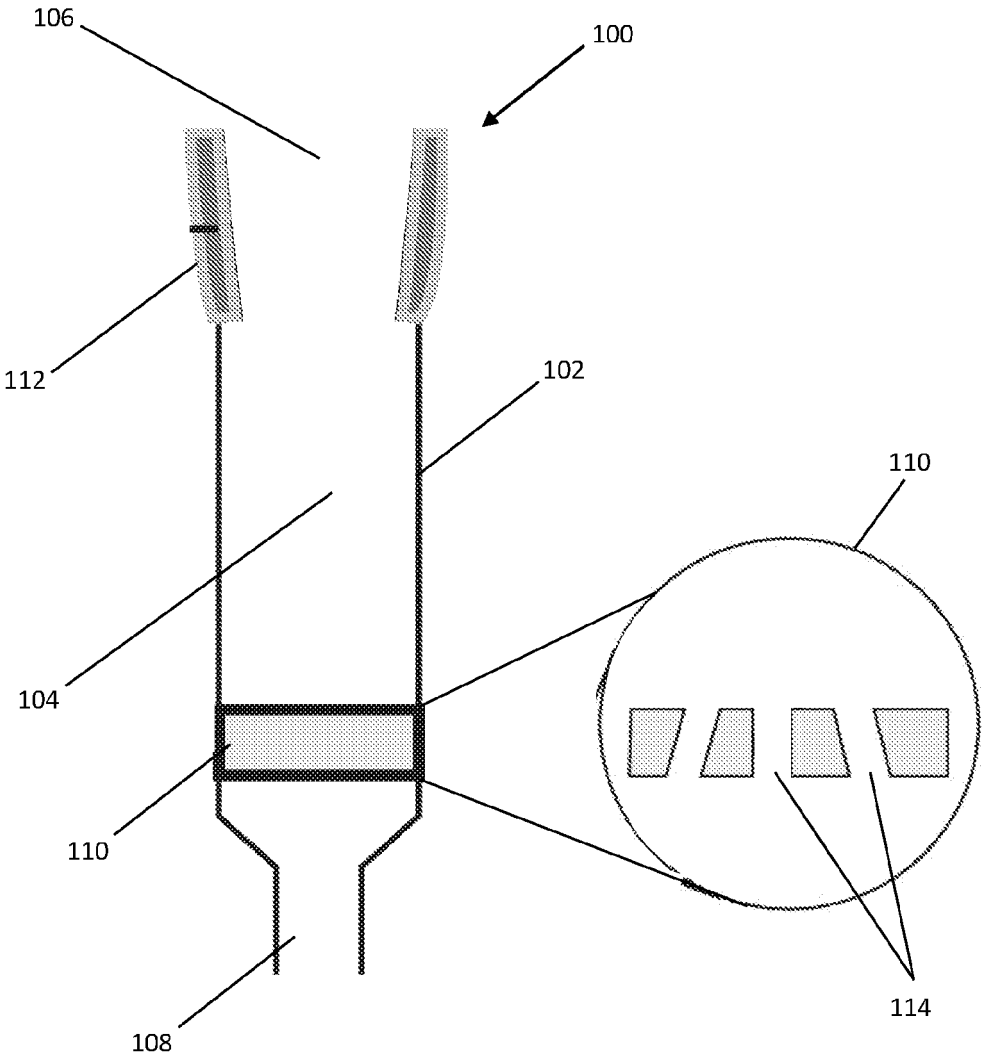


Fig. 1

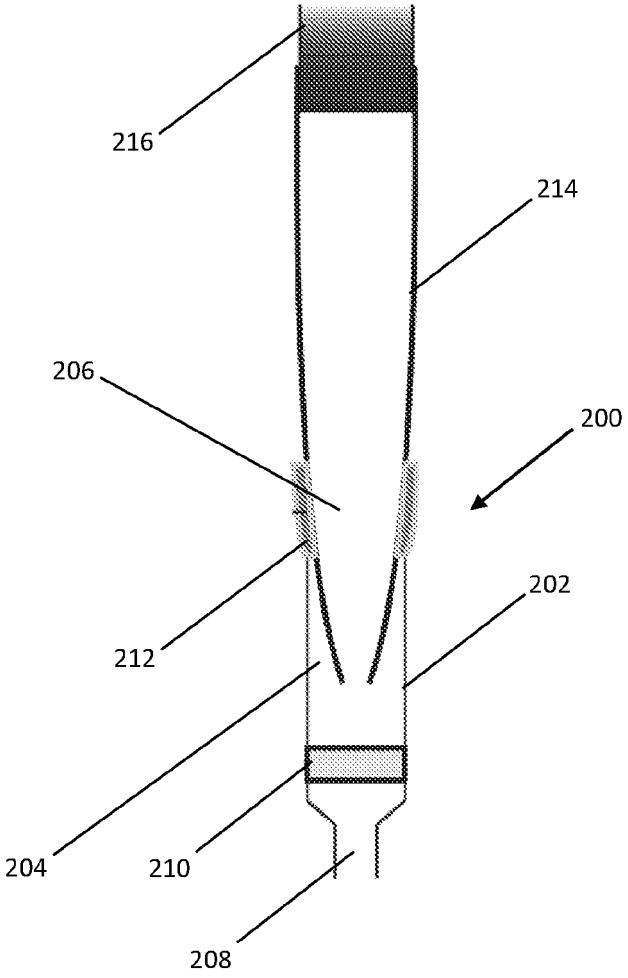


Fig. 2

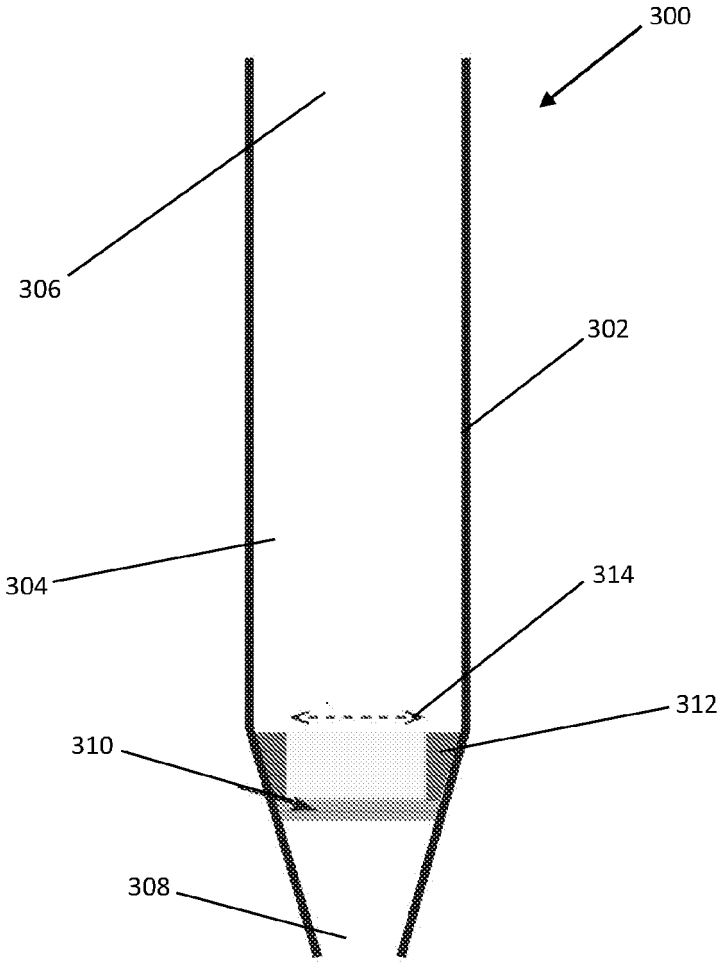


Fig. 3

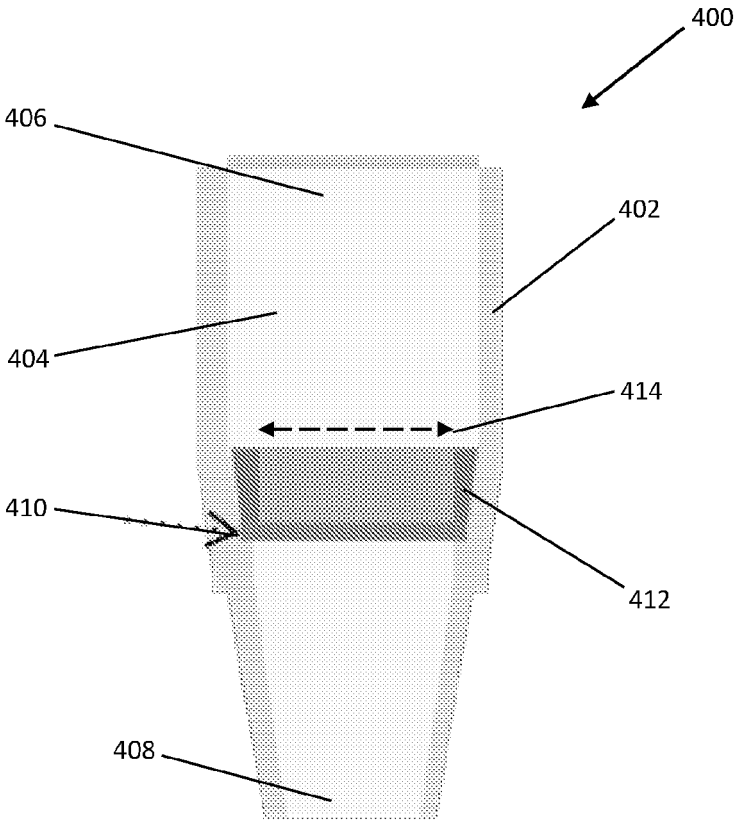


Fig. 4

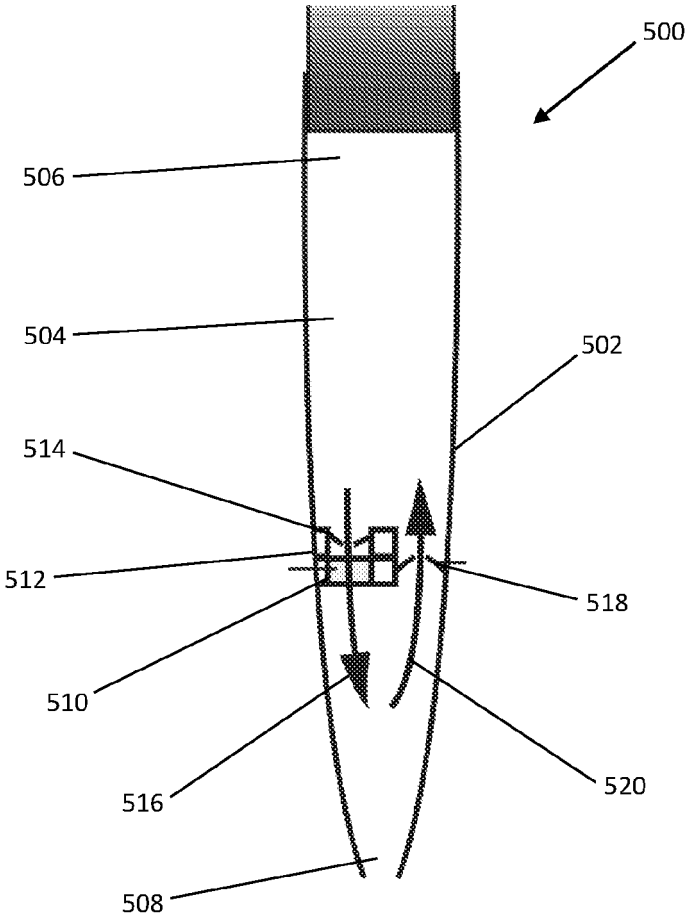


Fig. 5

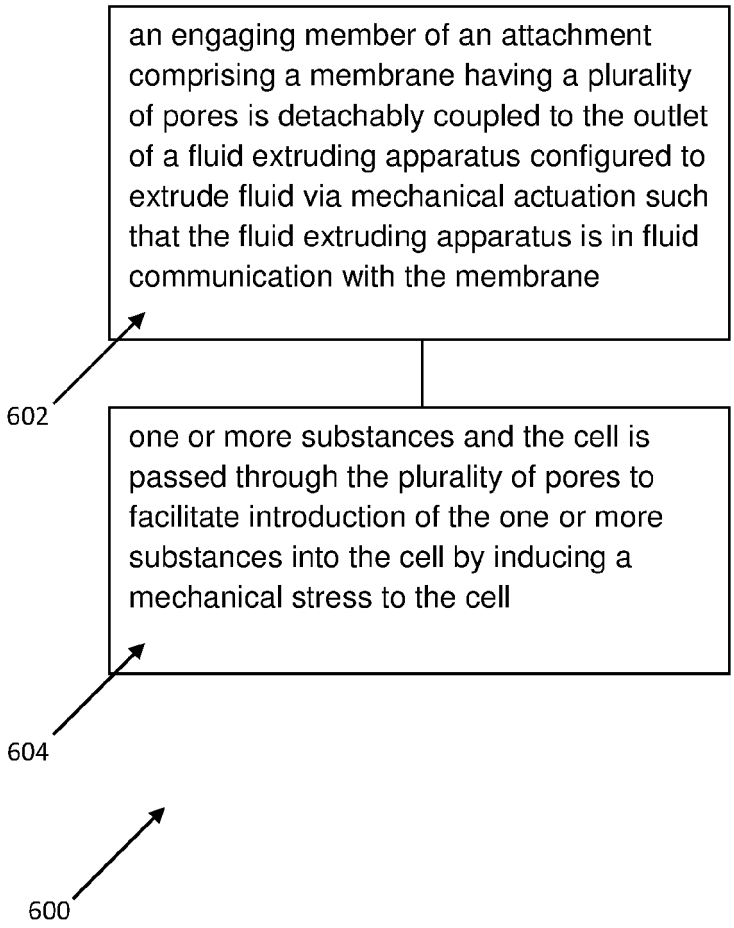

an engaging member of an attachment comprising a membrane having a plurality of pores is detachably coupled to the outlet of a fluid extruding apparatus configured to extrude fluid via mechanical actuation such that the fluid extruding apparatus is in fluid communication with the membrane
602
one or more substances and the cell is passed through the plurality of pores to facilitate introduction of the one or more substances into the cell by inducing a mechanical stress to the cell
604
600

Fig. 6

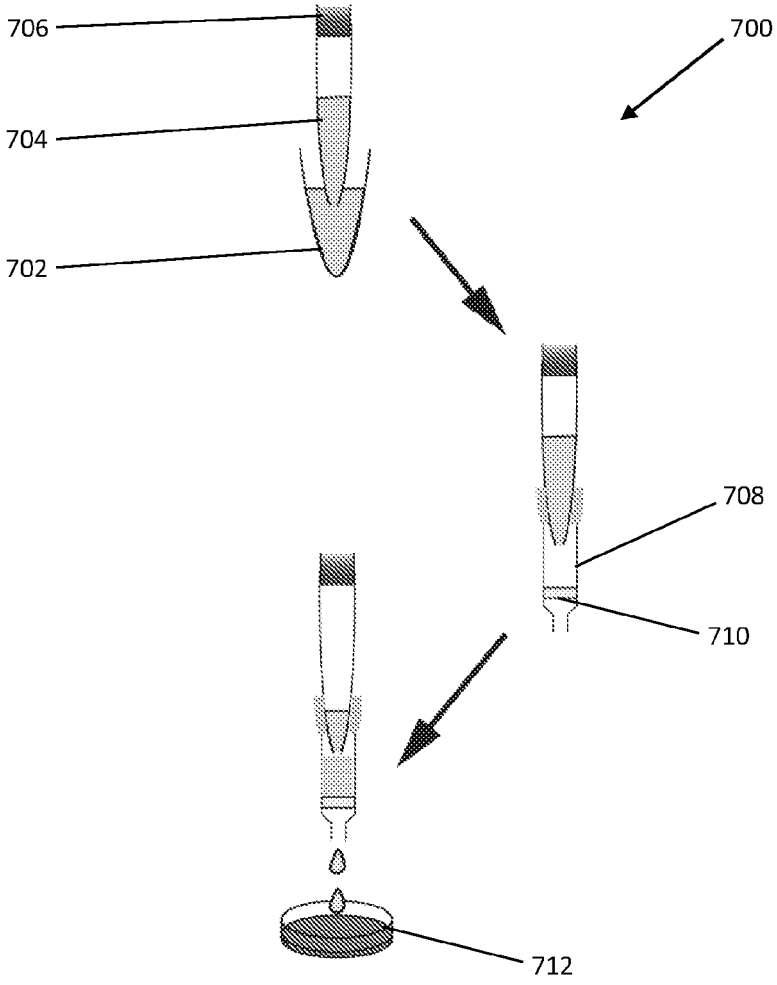


Fig. 7

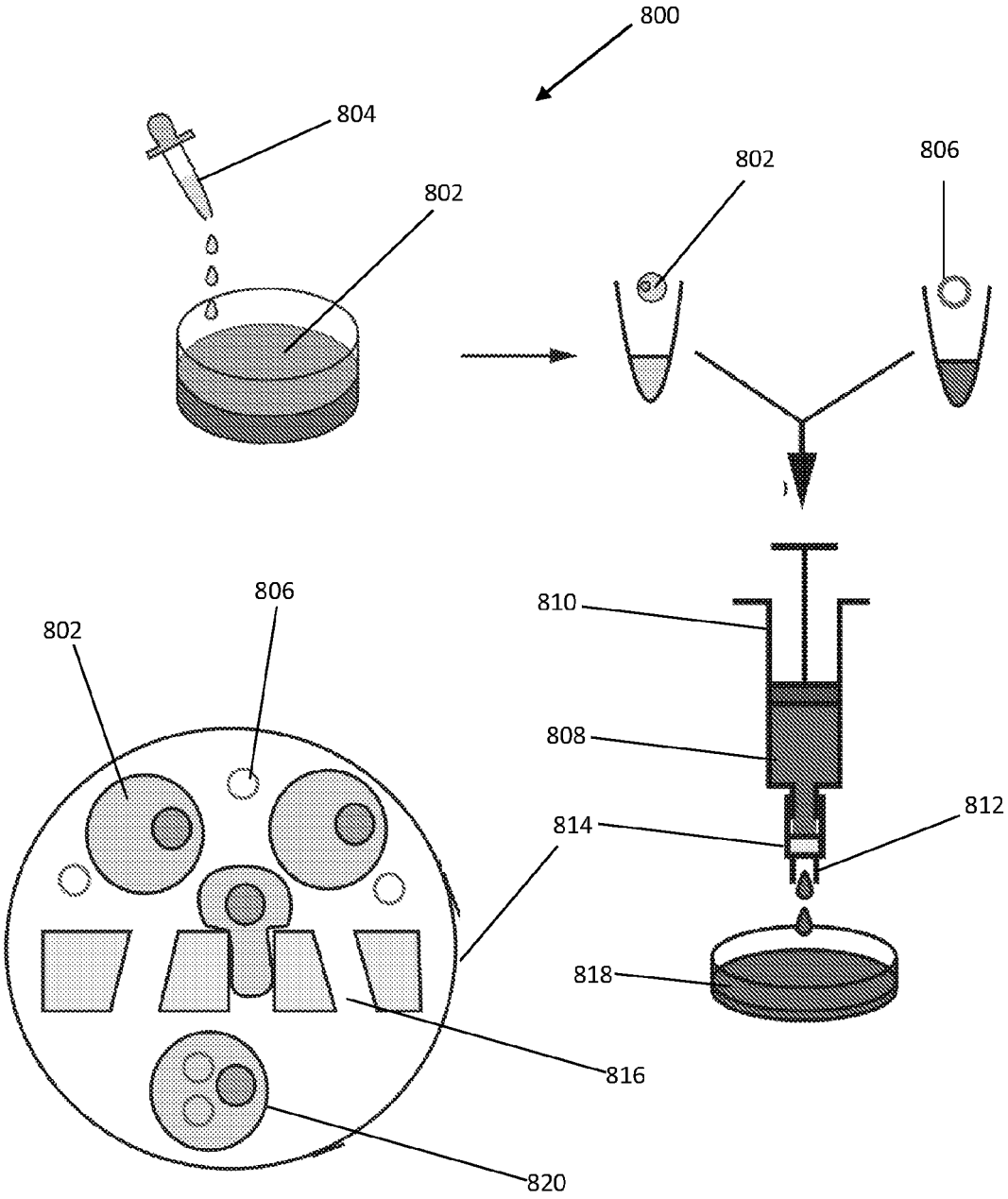


Fig. 8

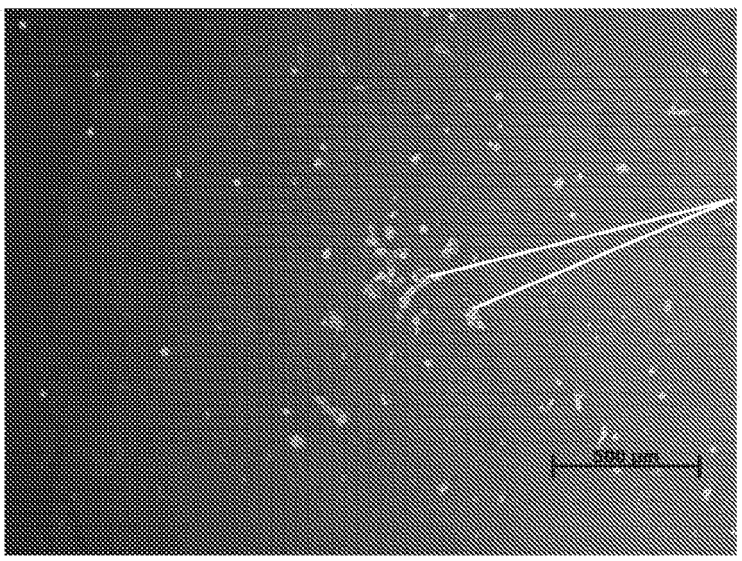


Fig. 9A

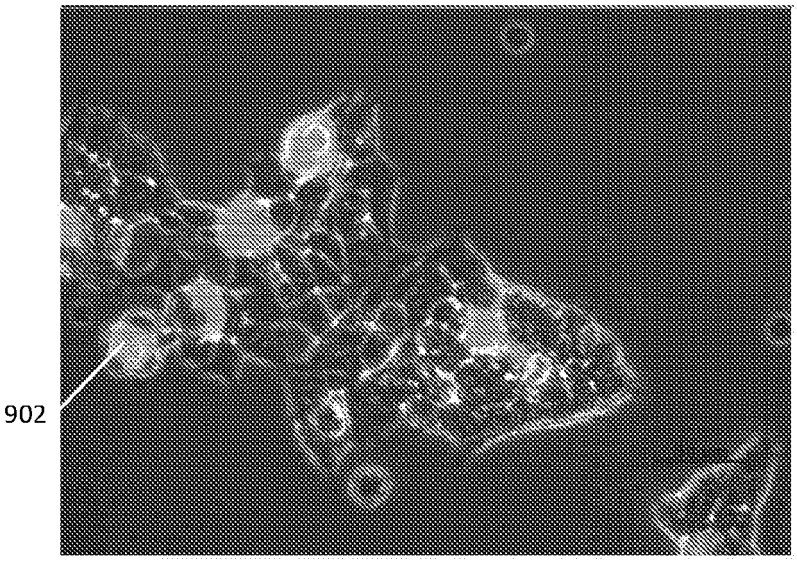


Fig. 9B

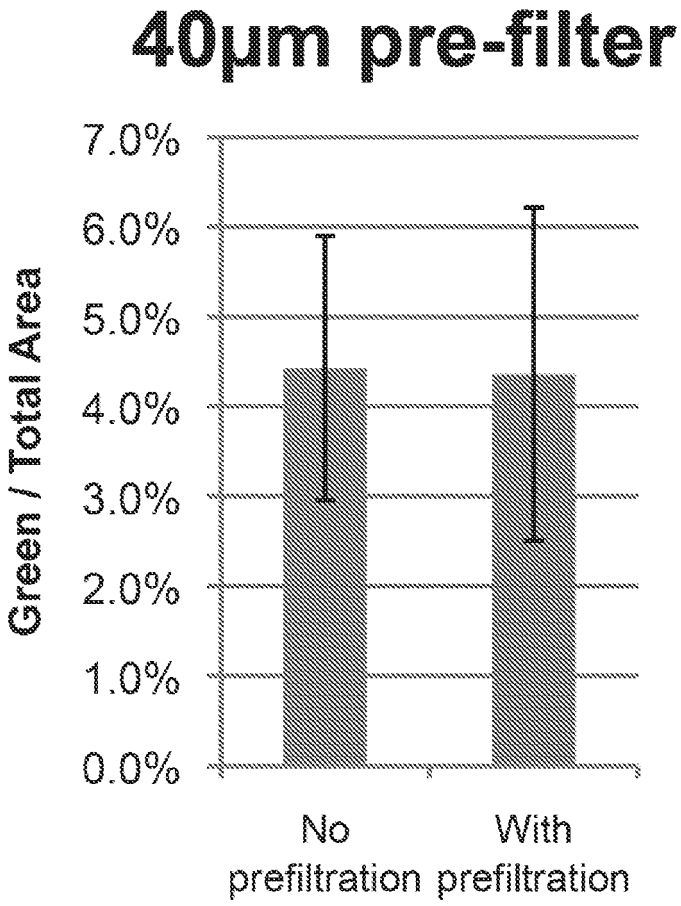

40µm pre-filter
Green / Total Area
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
No prefiltration
With prefiltration

Fig. 10

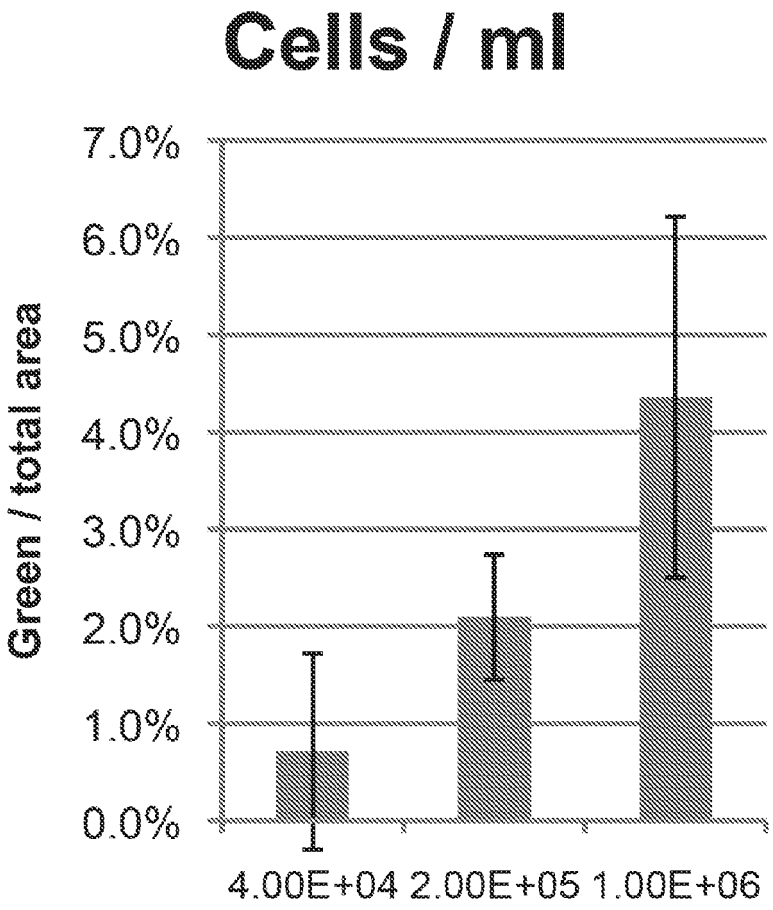

Cells / ml
Green / total area
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
4.00E+04
2.00E+05
1.00E+06

Fig. 11

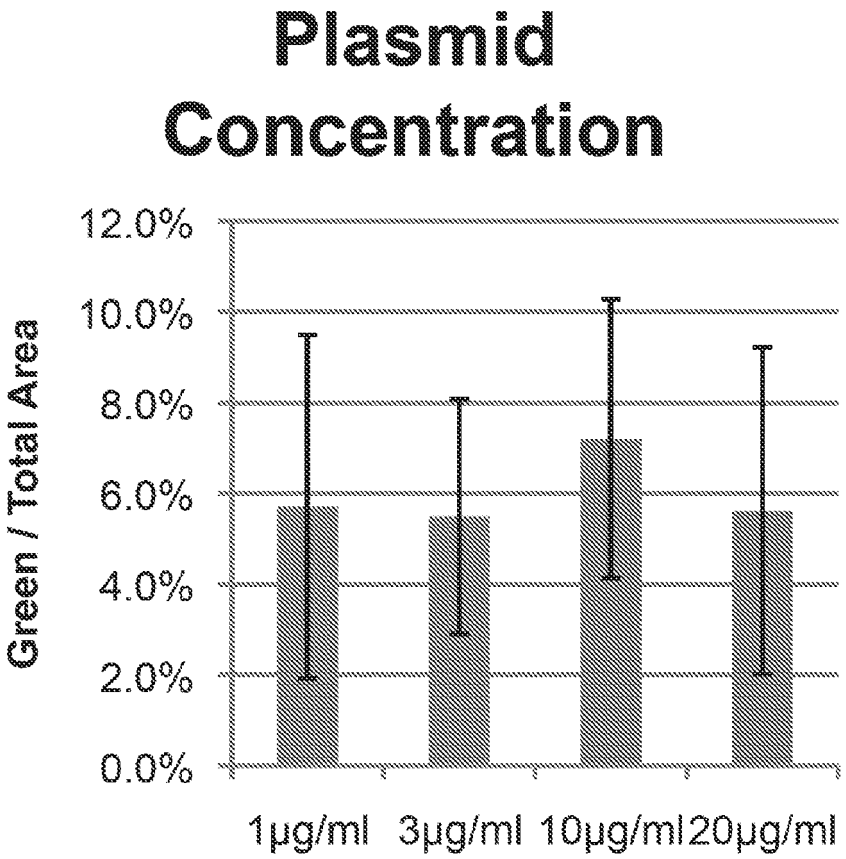

Plasmid Concentration
Green / Total Area
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
1µg/ml
3µg/ml
10µg/ml
20µg/ml

Fig. 12

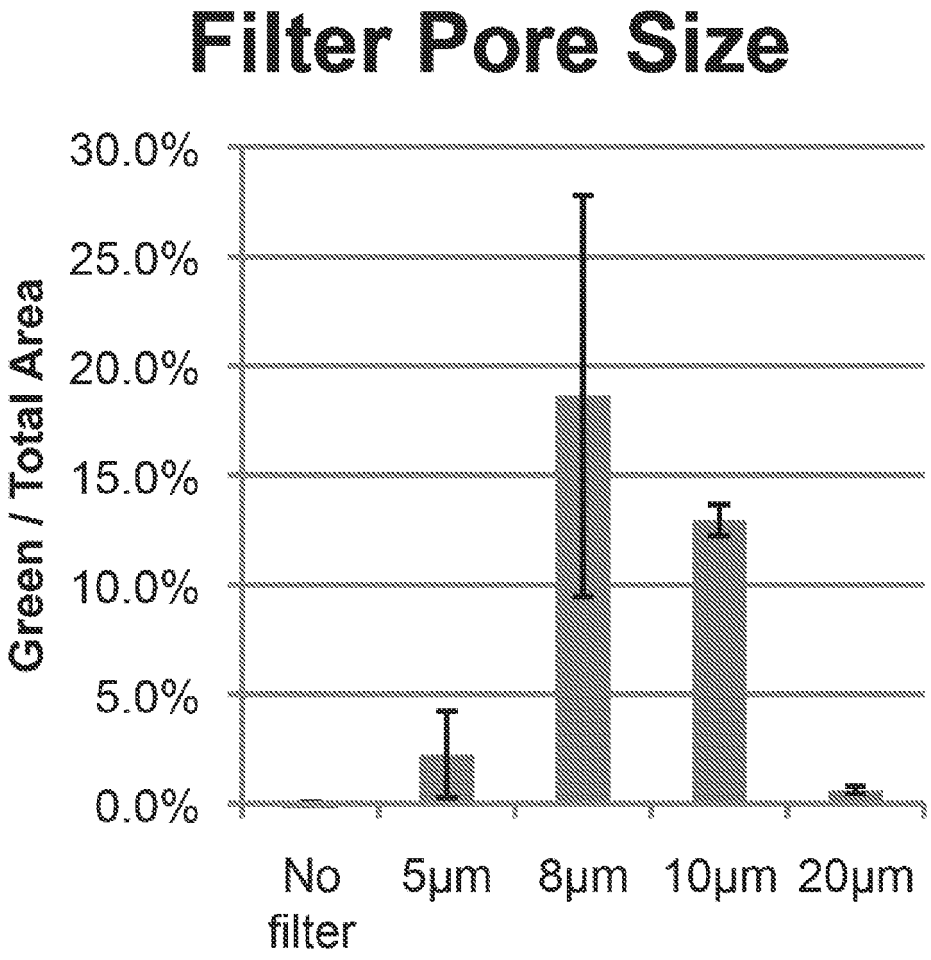

Filter Pore Size
Green / Total Area
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
No filter
5µm
8µm
10µm
20µm

Fig. 13

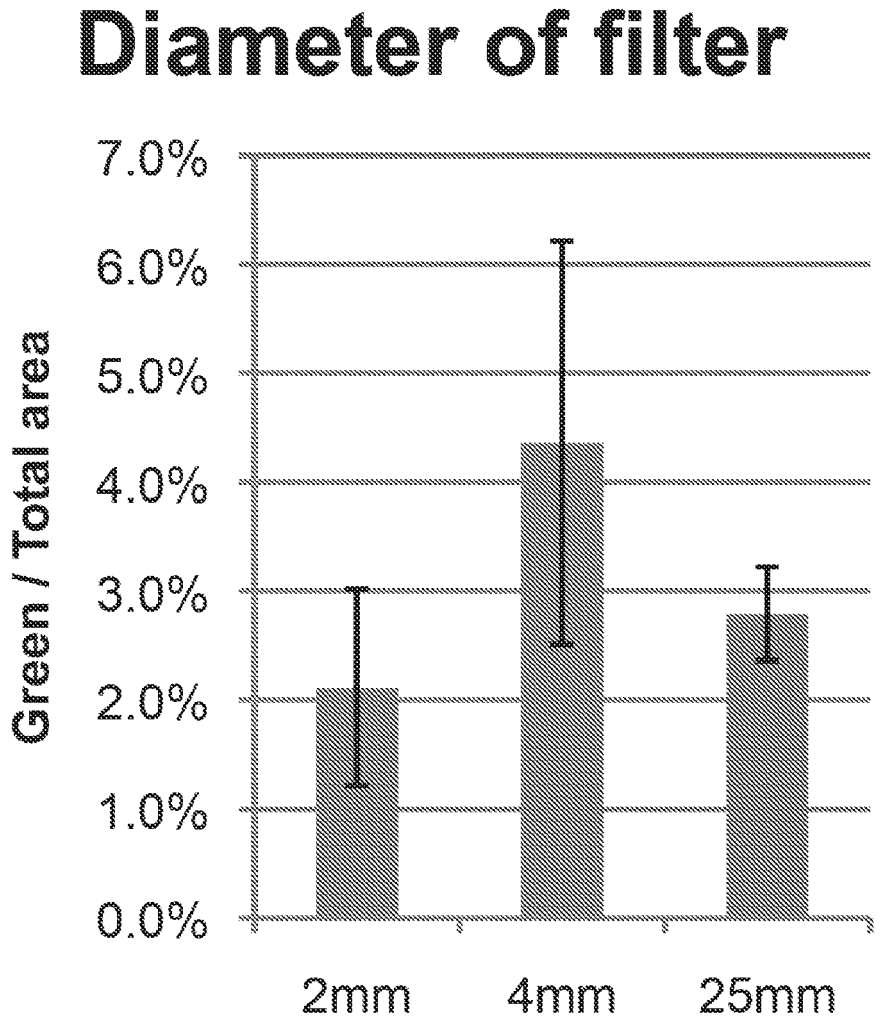

Diameter of filter
Green / Total area
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
2mm
4mm
25mm

Fig. 14

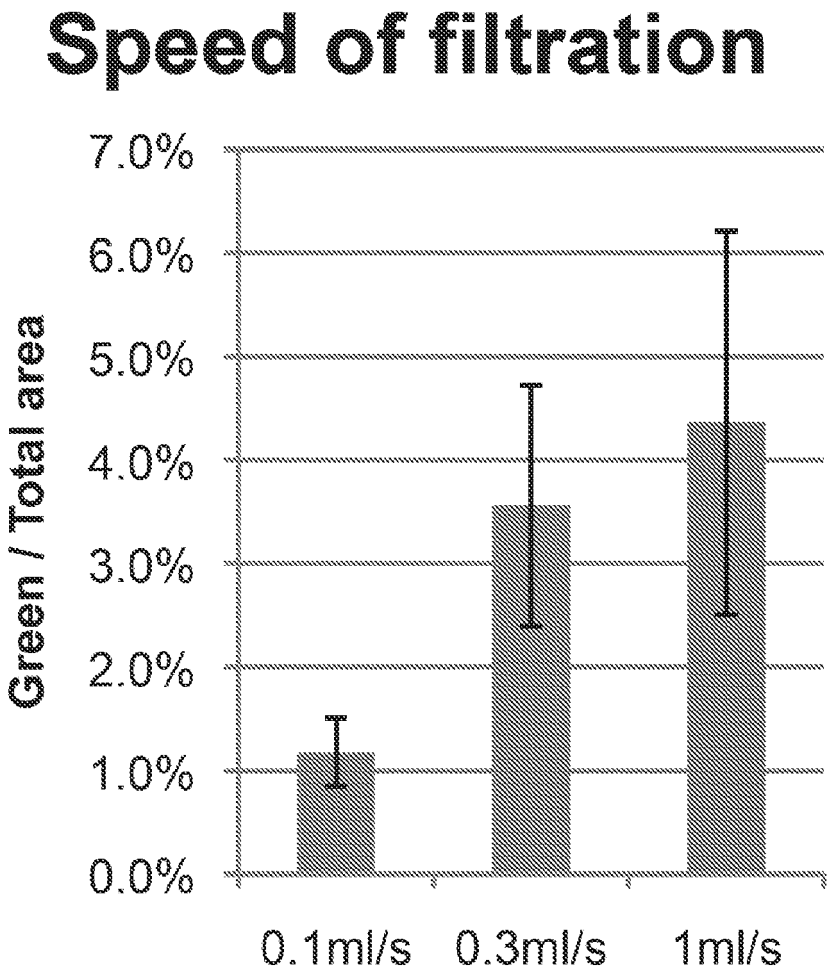

Speed of filtration
Green / Total area
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
0.1ml/s
0.3ml/s
1ml/s

Fig. 15

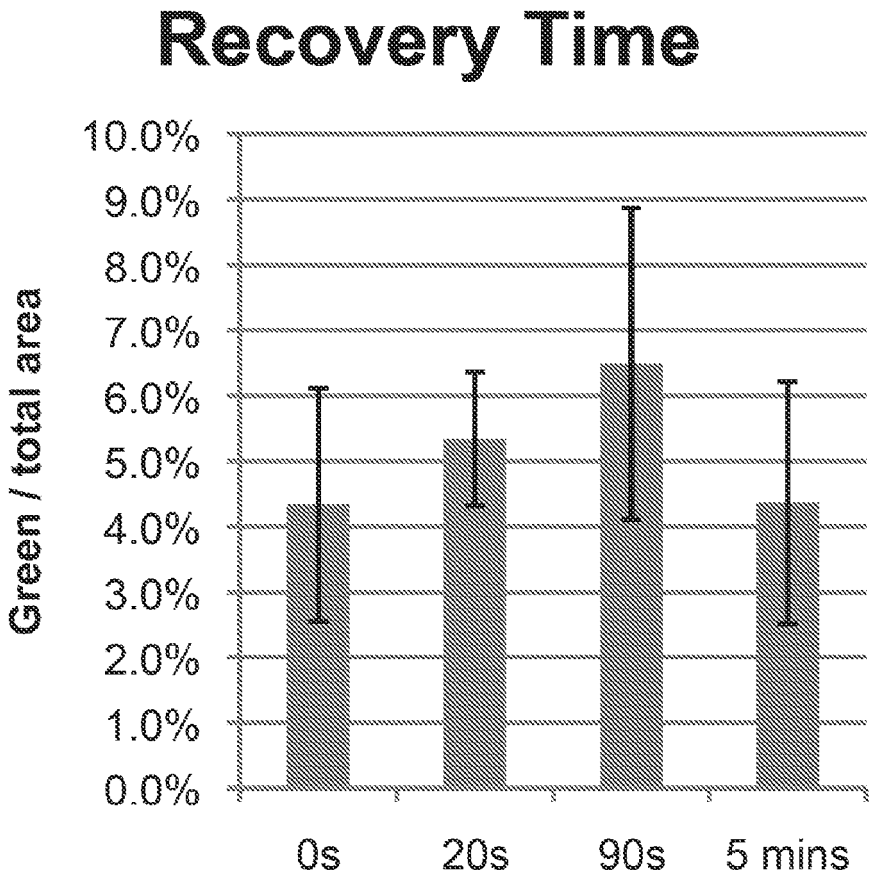

Recovery Time
Green / total area
10.0%
9.0%
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
0s
20s
90s
5 mins

Fig. 16

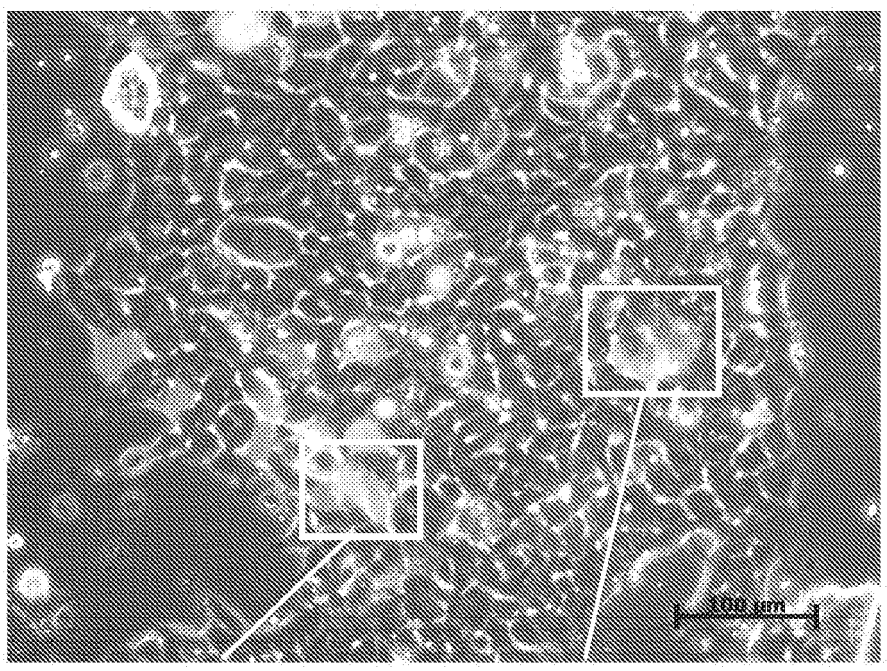


Fig. 17

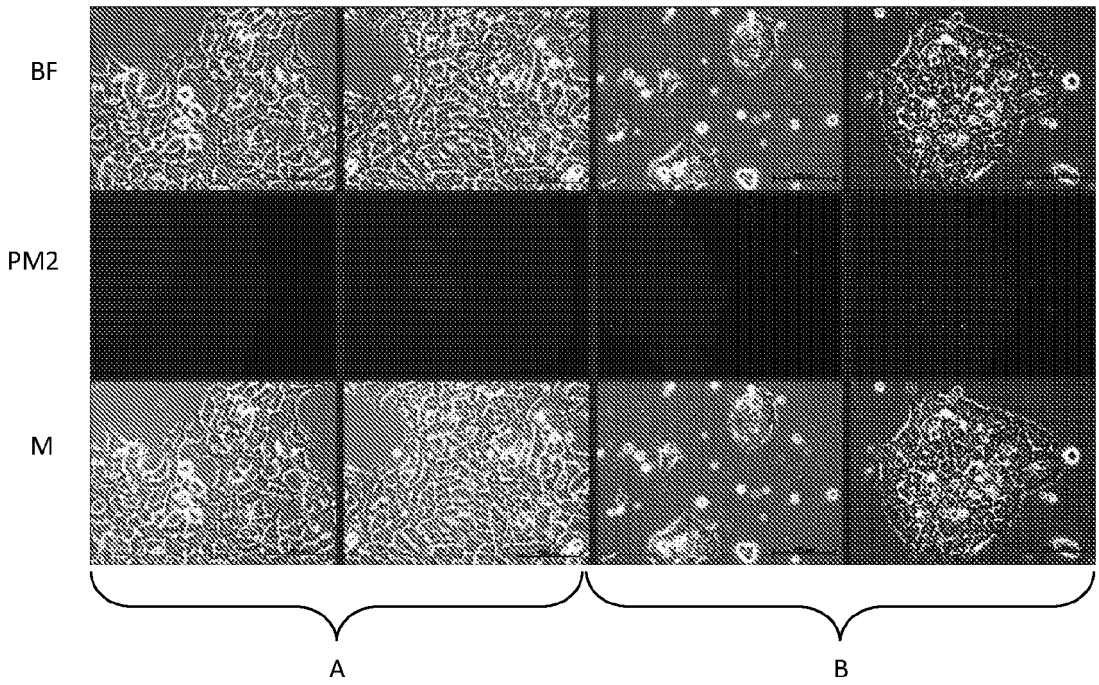


Fig. 18

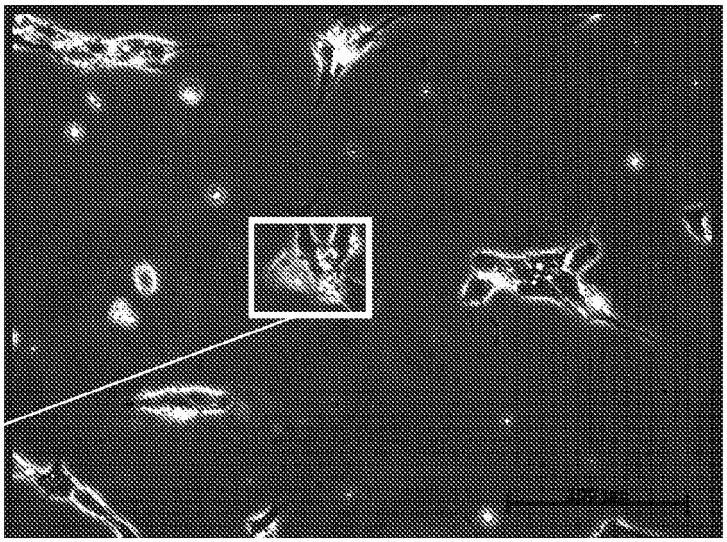


Fig. 19A

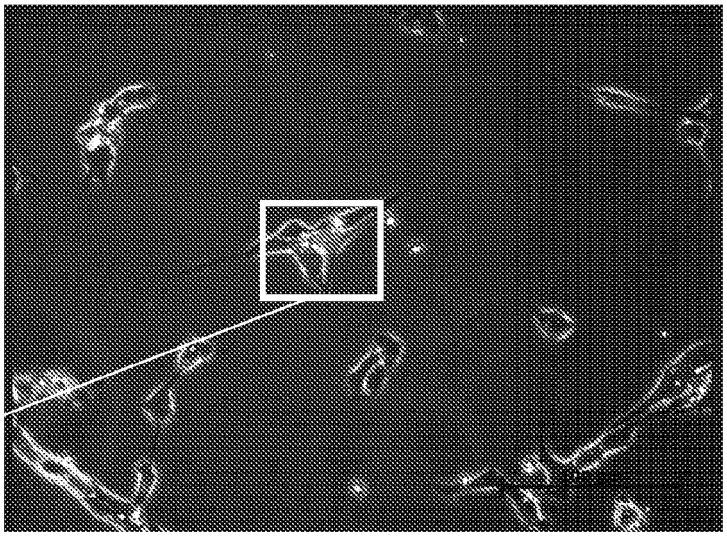


Fig. 19B

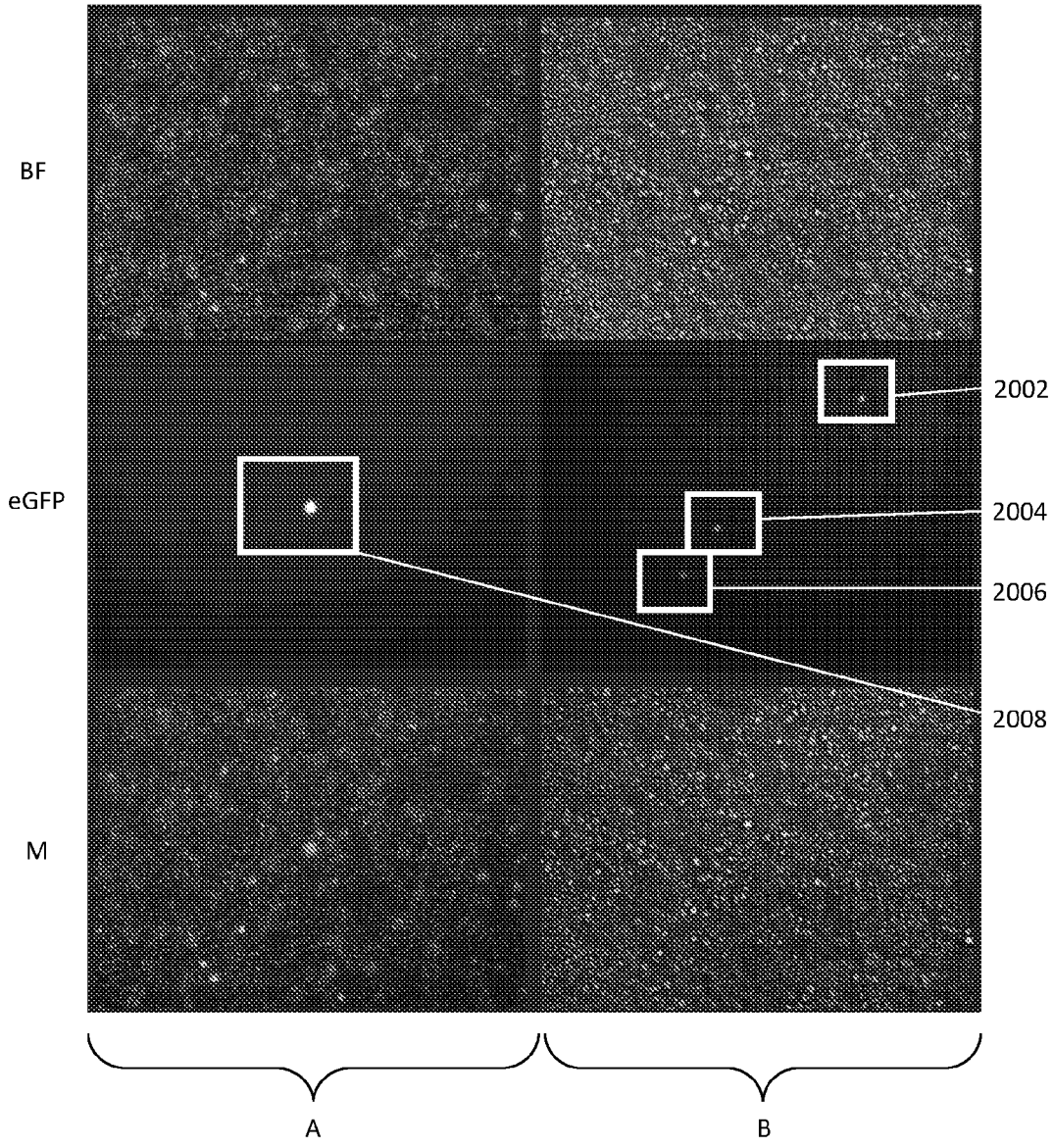


Fig. 20

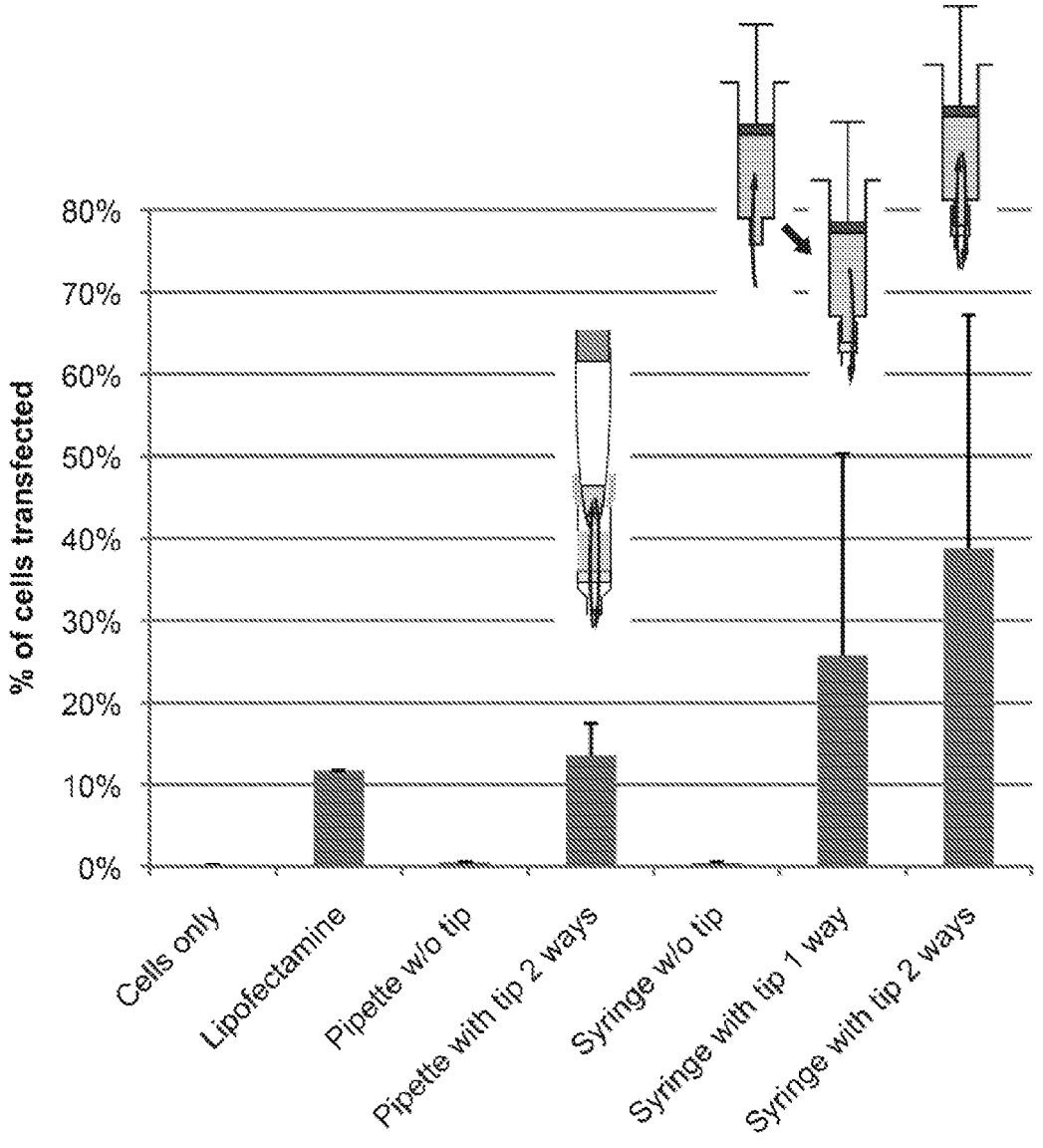

% of cells transfected
80%
70%
60%
50%
40%
30%
20%
10%
0%
Cells only
Lipofectamine
Pipette w/o tip
Pipette with tip 2 ways
Syringe w/o tip
Syringe with tip 1 way
Syringe with tip 2 ways

Fig. 21

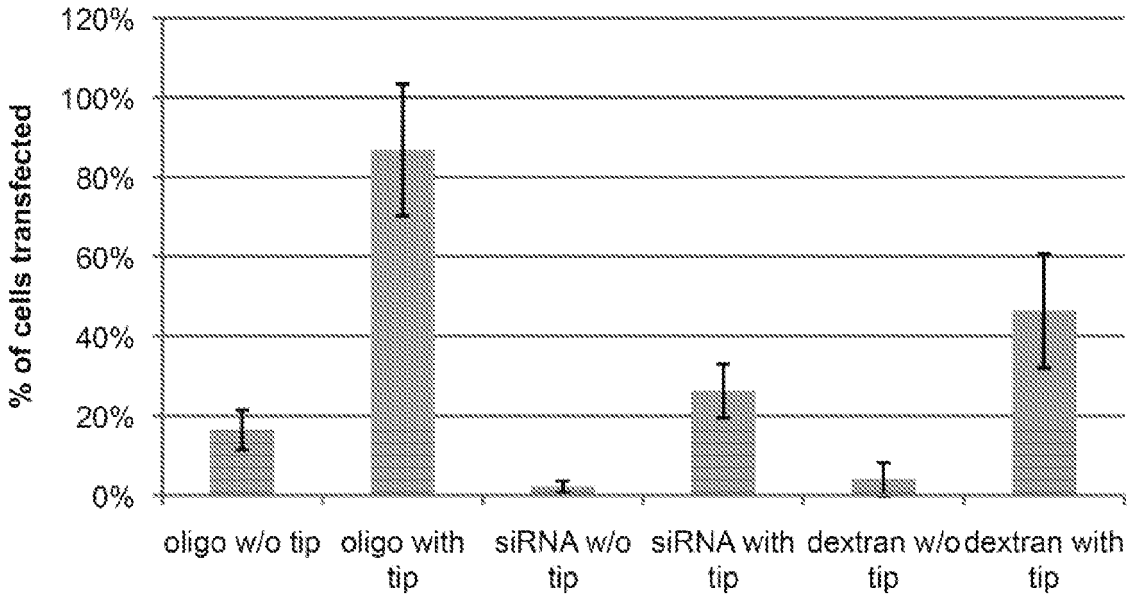

% of cells transfected
120%
100%
80%
60%
40%
20%
0%
oligo w/o tip
oligo with tip
siRNA w/o tip
siRNA with tip
dextran w/o tip
dextran with tip

Fig. 22

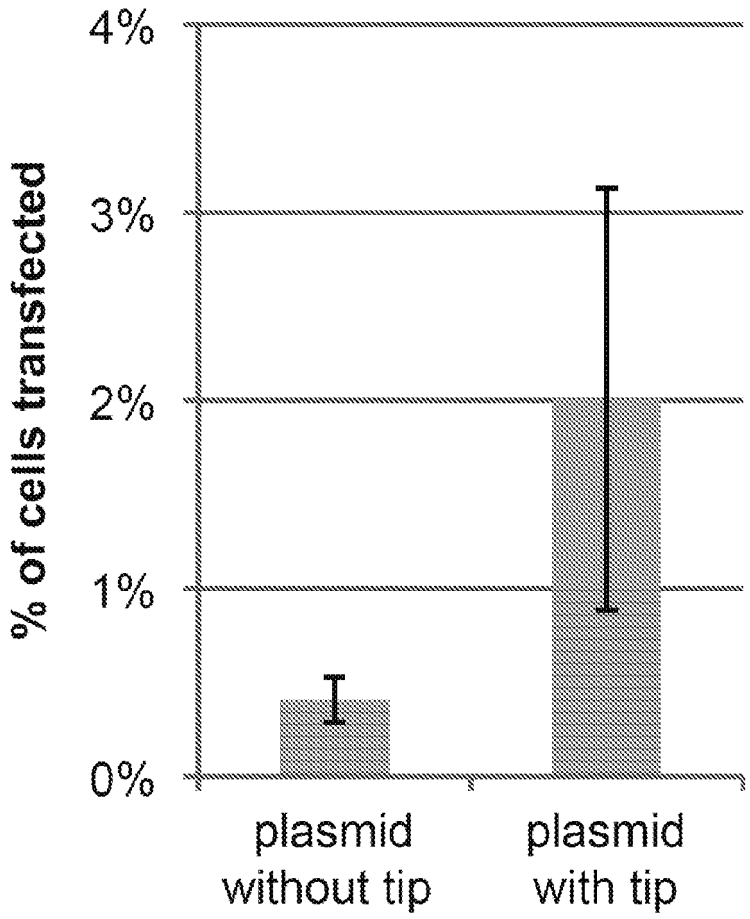

% of cells transfected
4%
3%
2%
1%
0%
plasmid without tip
plasmid with tip

Fig. 23