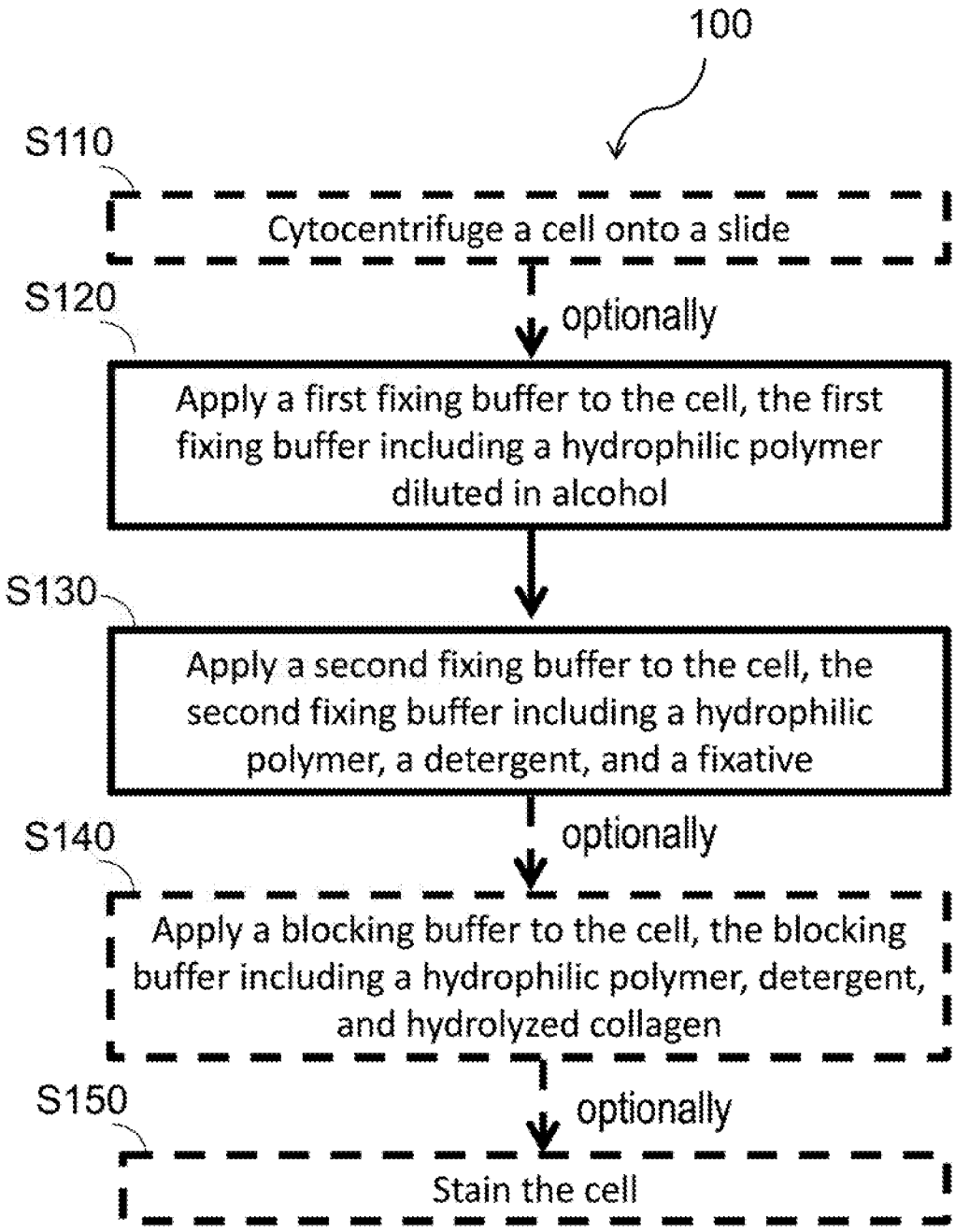

100
S110
Cytocentrifuge a cell onto a slide
optionally
S120
Apply a first fixing buffer to the cell, the first fixing buffer including a hydrophilic polymer diluted in alcohol
S130
Apply a second fixing buffer to the cell, the second fixing buffer including a hydrophilic polymer, a detergent, and a fixative
optionally
S140
Apply a blocking buffer to the cell, the blocking buffer including a hydrophilic polymer, detergent, and hydrolyzed collagen
optionally
S150
Stain the cell

FIG. 1

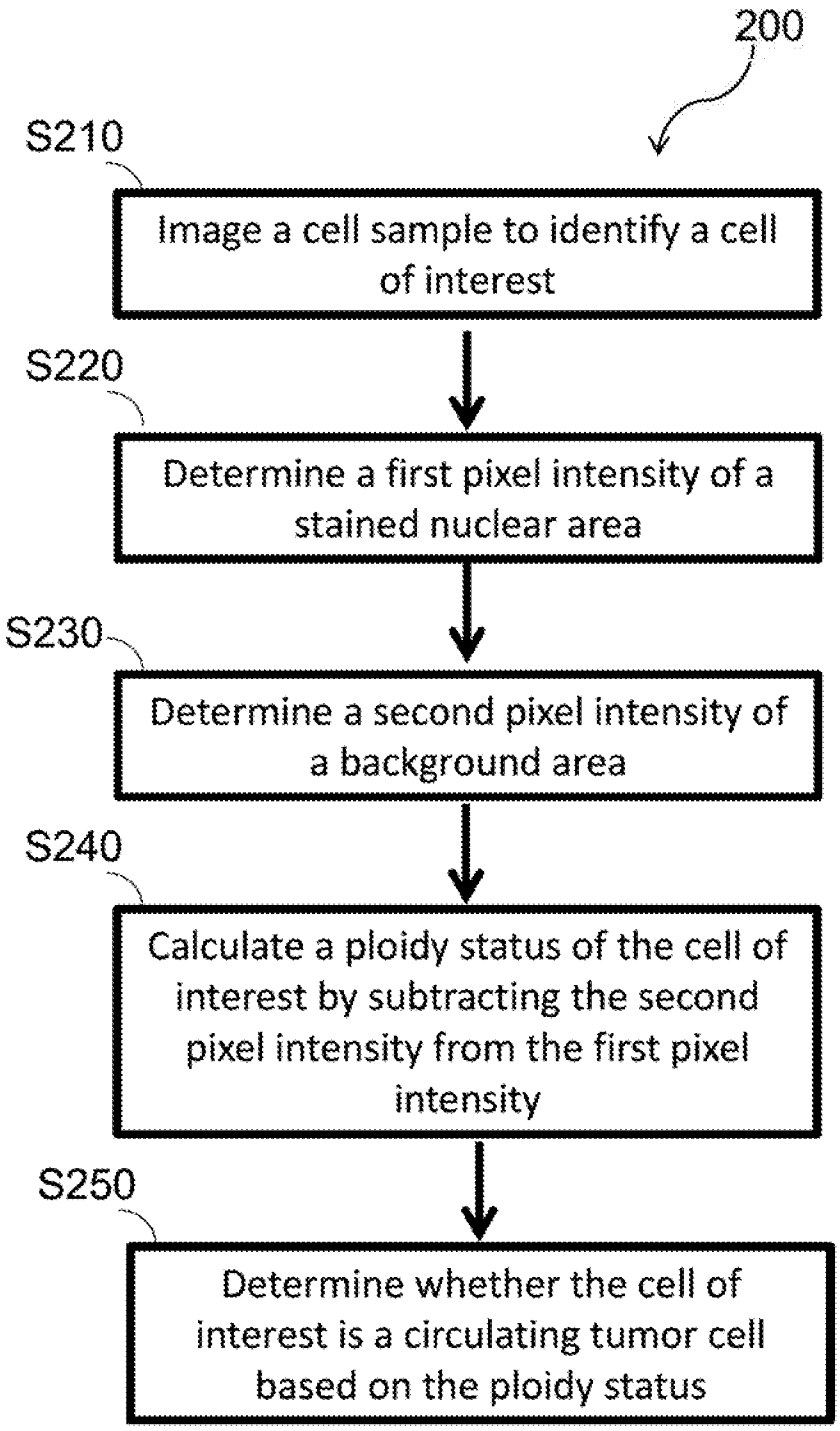

200
S210
Image a cell sample to identify a cell of interest
S220
Determine a first pixel intensity of a stained nuclear area
S230
Determine a second pixel intensity of a background area
S240
Calculate a ploidy status of the cell of interest by subtracting the second pixel intensity from the first pixel intensity
S250
Determine whether the cell of interest is a circulating tumor cell based on the ploidy status

FIG. 2

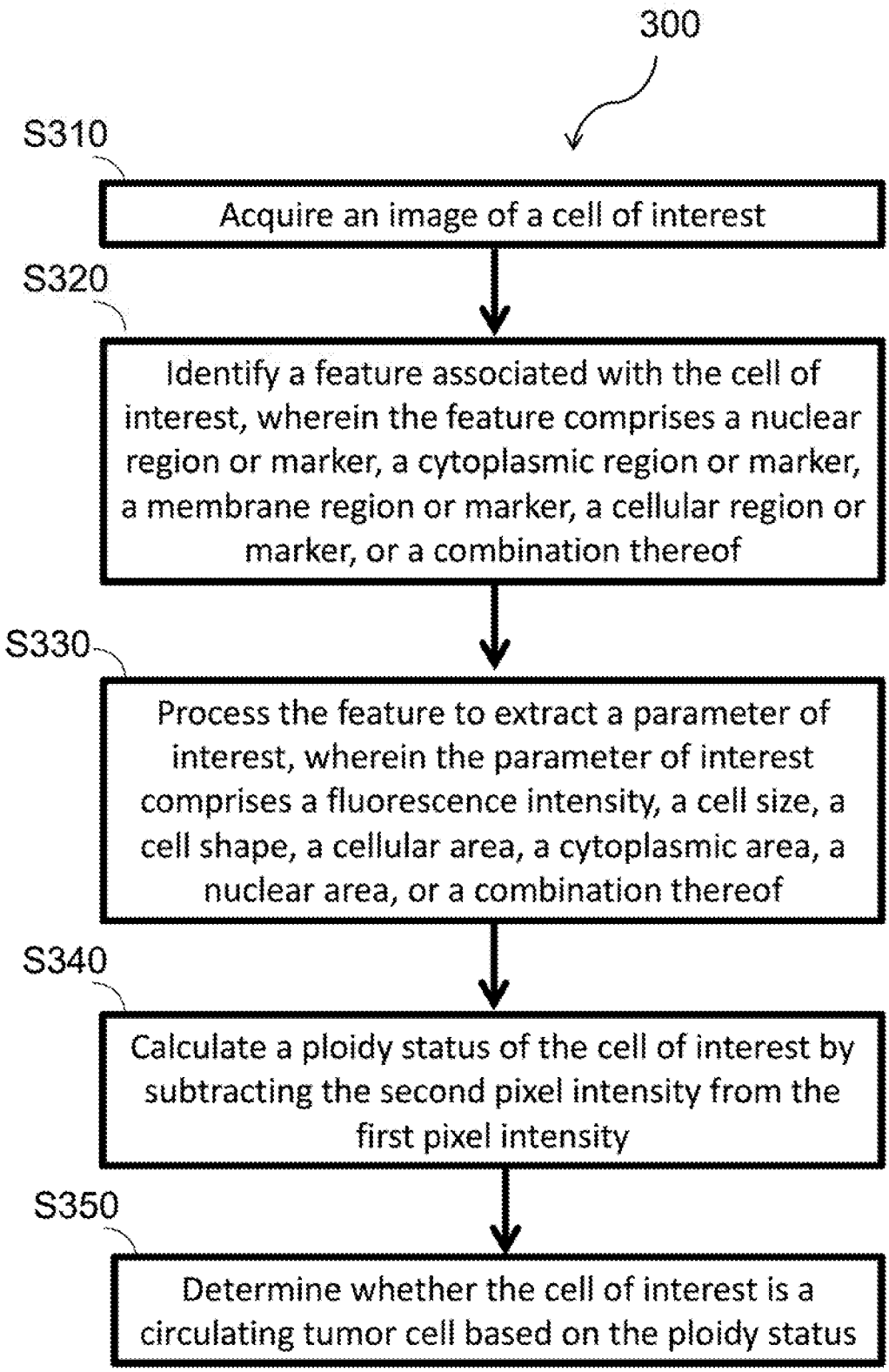

300
S310
Acquire an image of a cell of interest
S320
Identify a feature associated with the cell of interest, wherein the feature comprises a nuclear region or marker, a cytoplasmic region or marker, a membrane region or marker, a cellular region or marker, or a combination thereof
S330
Process the feature to extract a parameter of interest, wherein the parameter of interest comprises a fluorescence intensity, a cell size, a cell shape, a cellular area, a cytoplasmic area, a nuclear area, or a combination thereof
S340
Calculate a ploidy status of the cell of interest by subtracting the second pixel intensity from the first pixel intensity
S350
Determine whether the cell of interest is a circulating tumor cell based on the ploidy status

FIG. 3

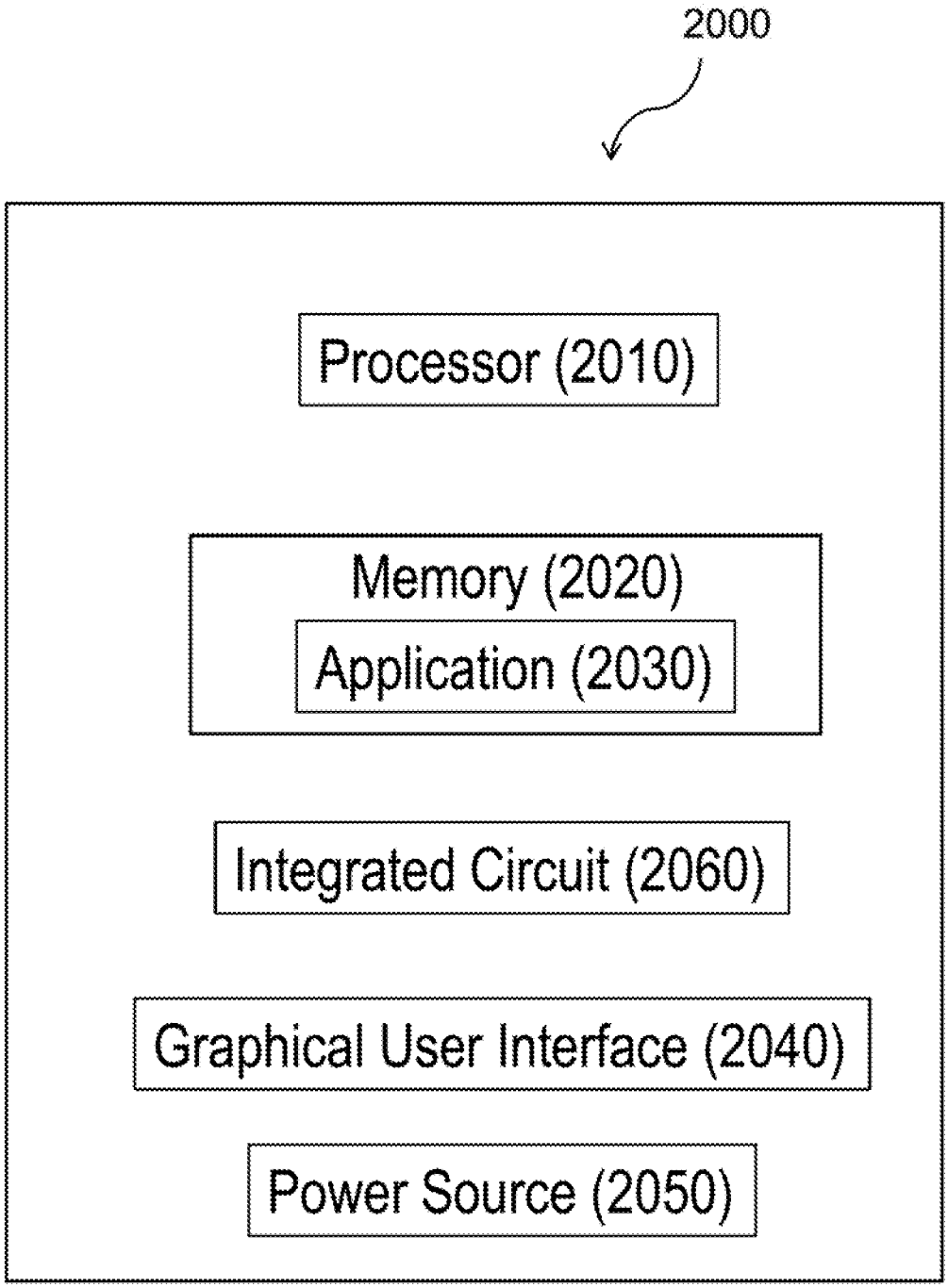

2000
Processor (2010)
Memory (2020)
Application (2030)
Integrated Circuit (2060)
Graphical User Interface (2040)
Power Source (2050)

FIG. 4

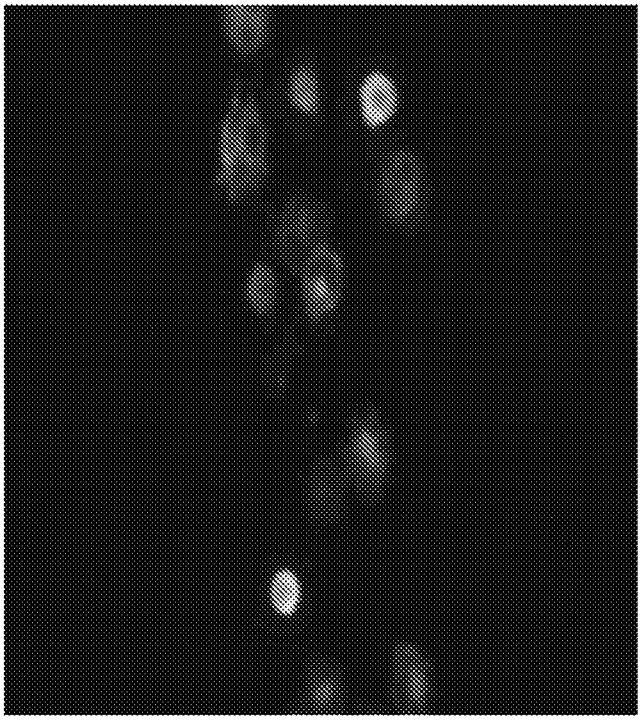


FIG. 5A

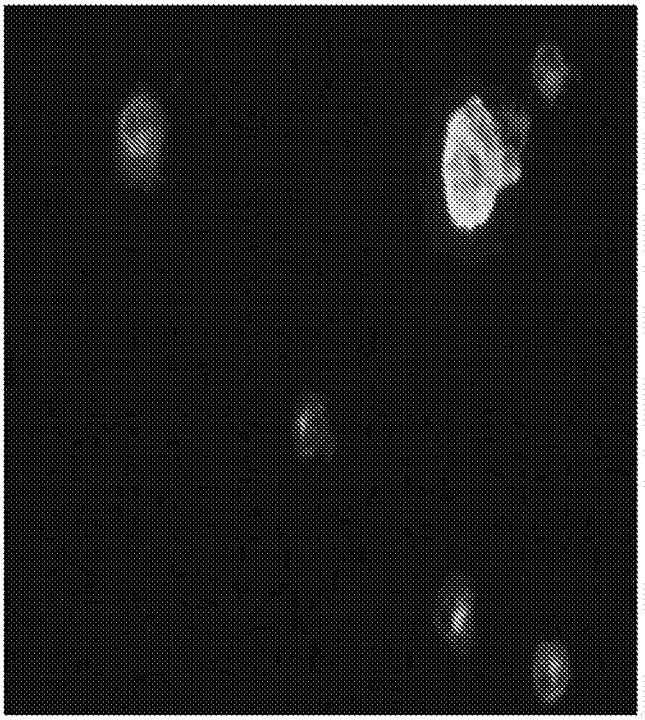


FIG. 5B

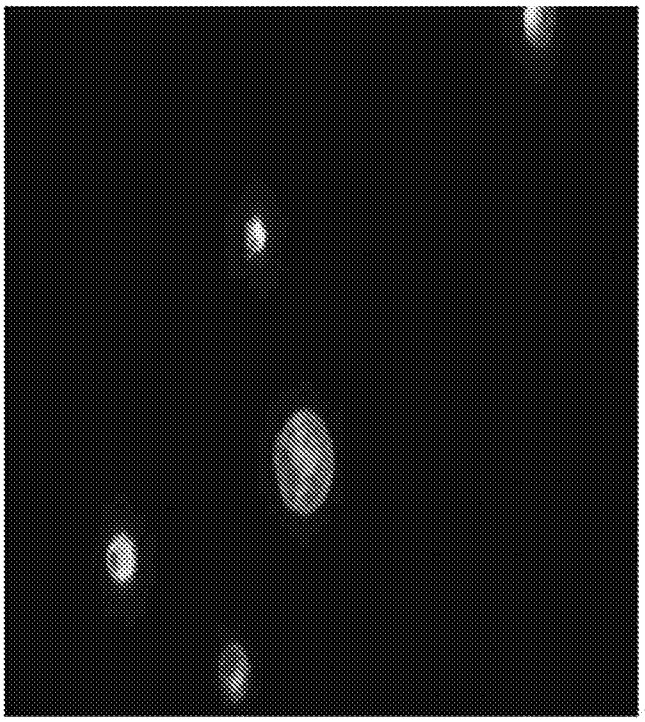


FIG. 5C

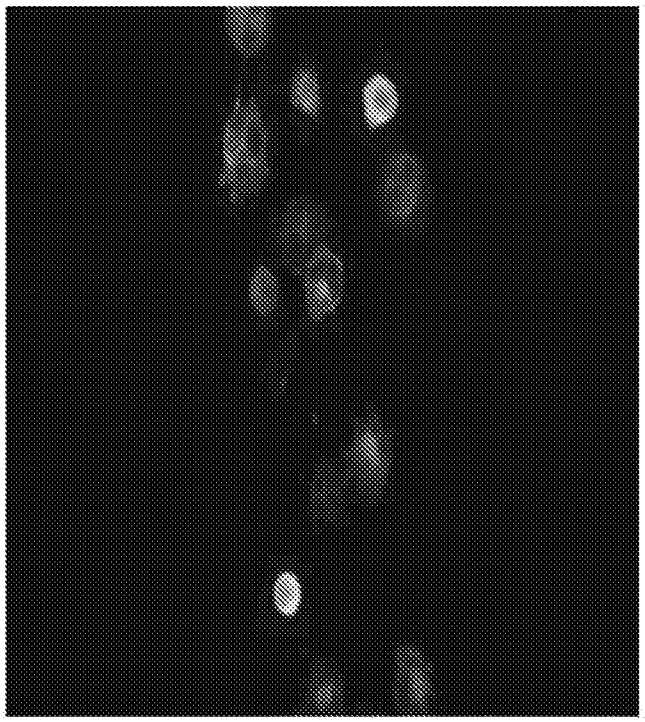


FIG. 5D

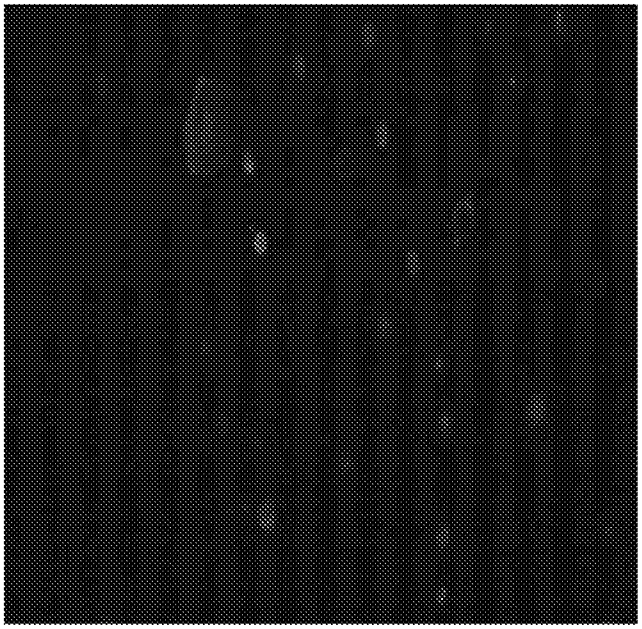


FIG. 6A

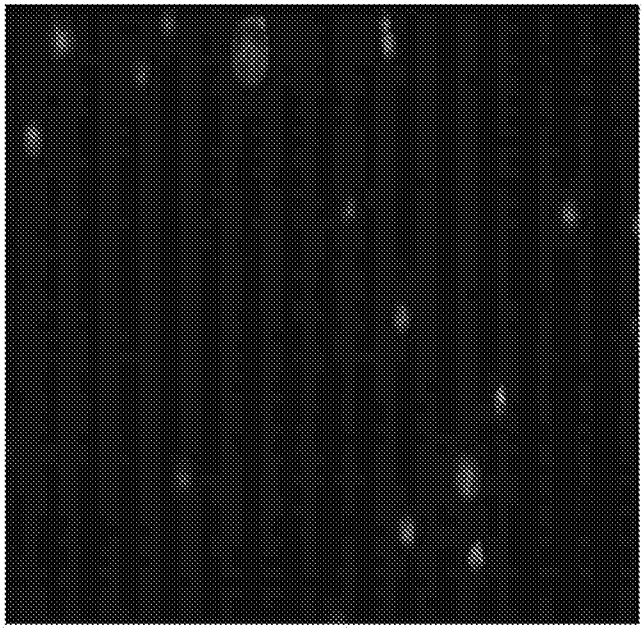


FIG. 6B

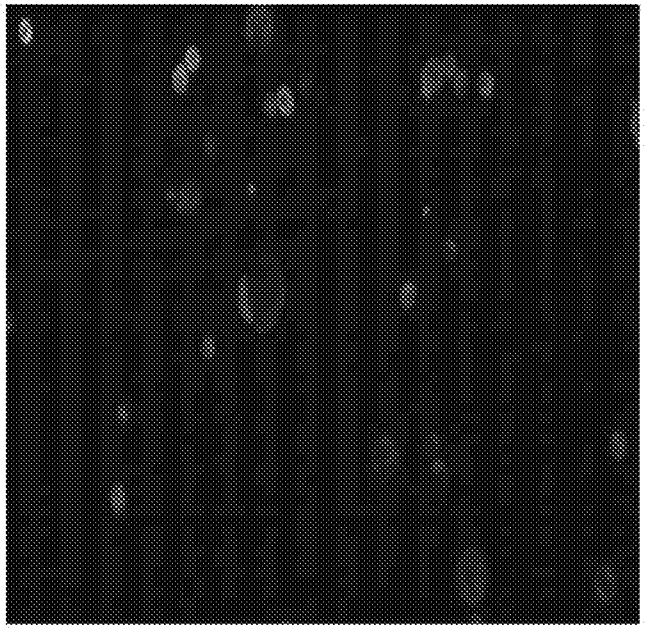


FIG. 6C

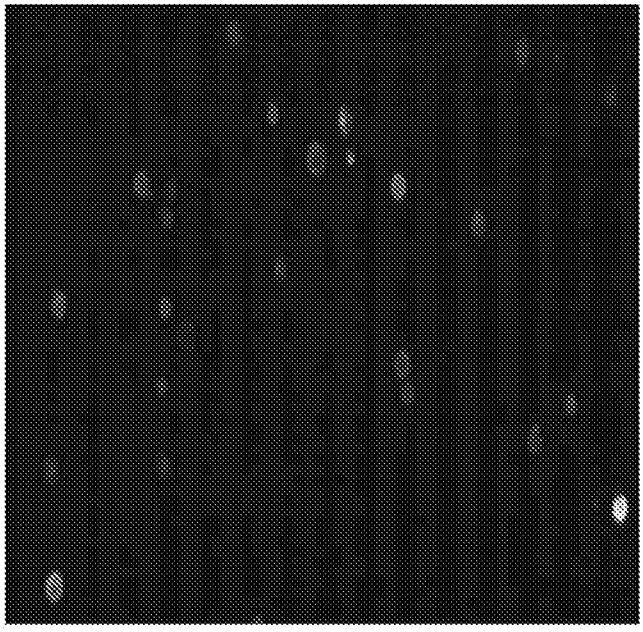


FIG. 6D

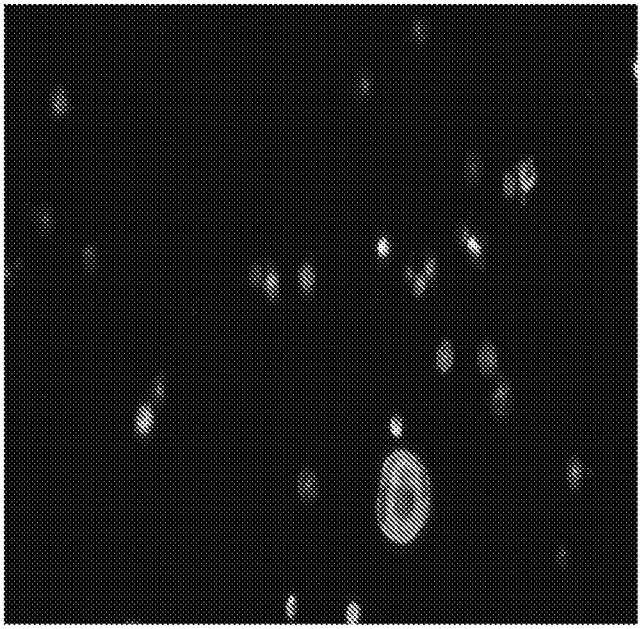


FIG. 6E

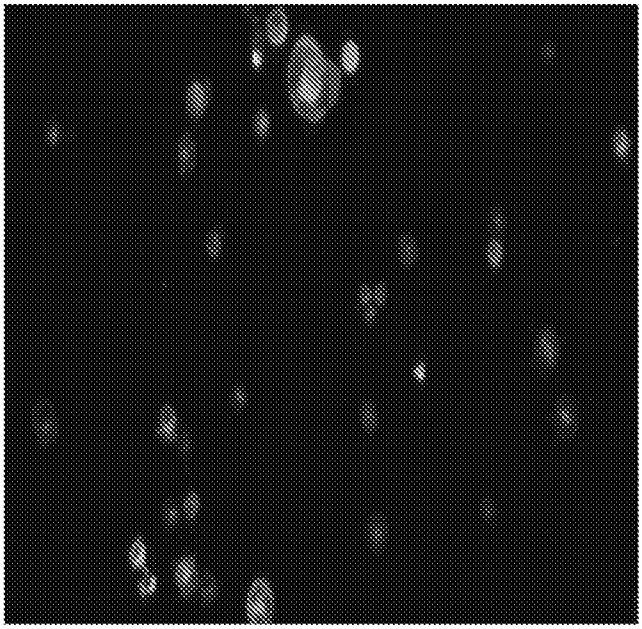


FIG. 6F

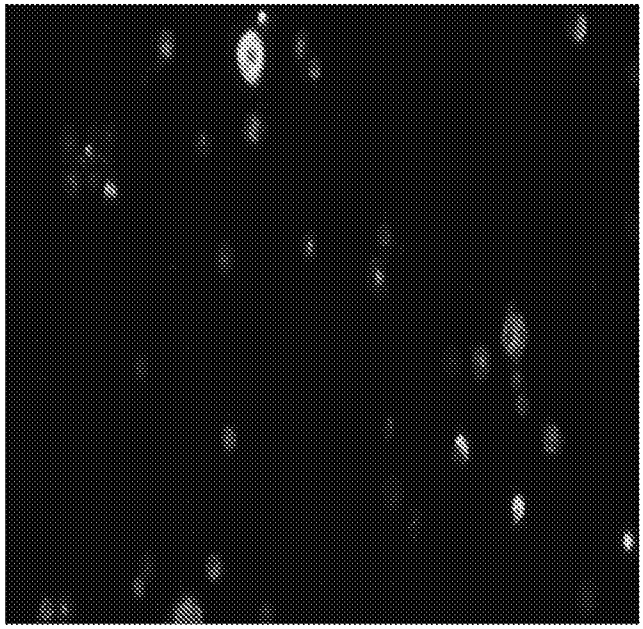


FIG. 6G

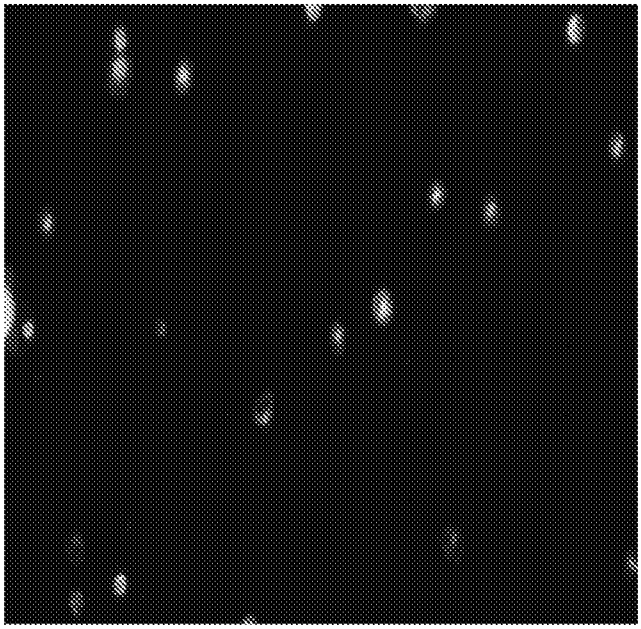


FIG. 6H

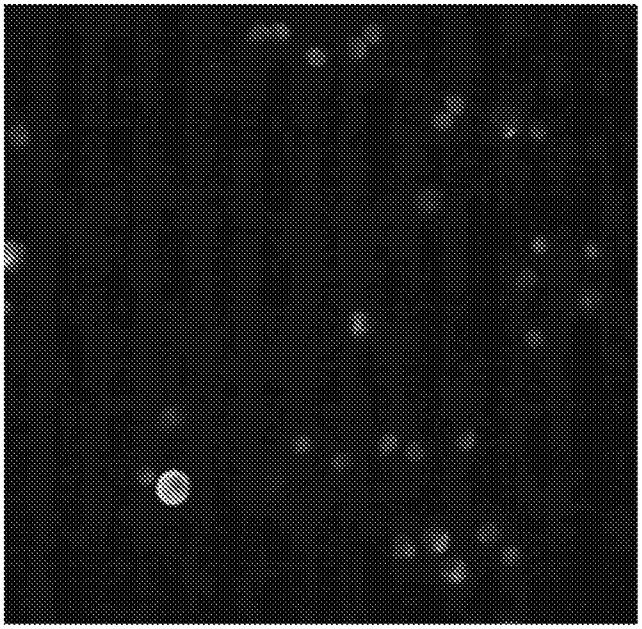


FIG. 7A

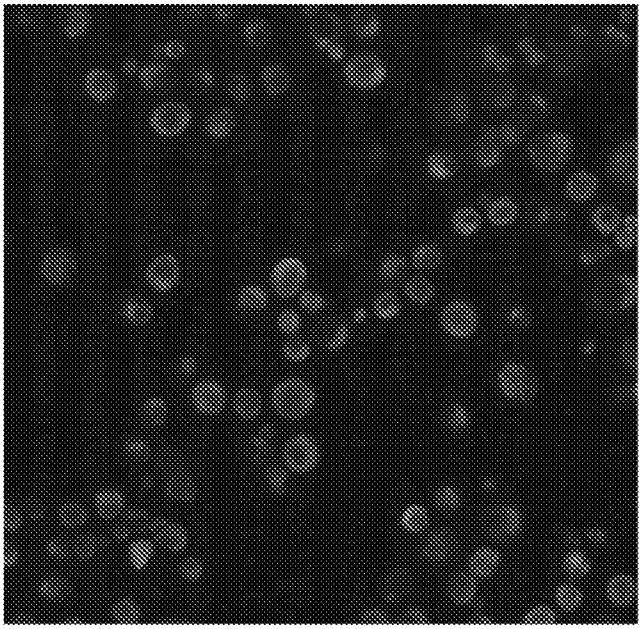


FIG. 7B

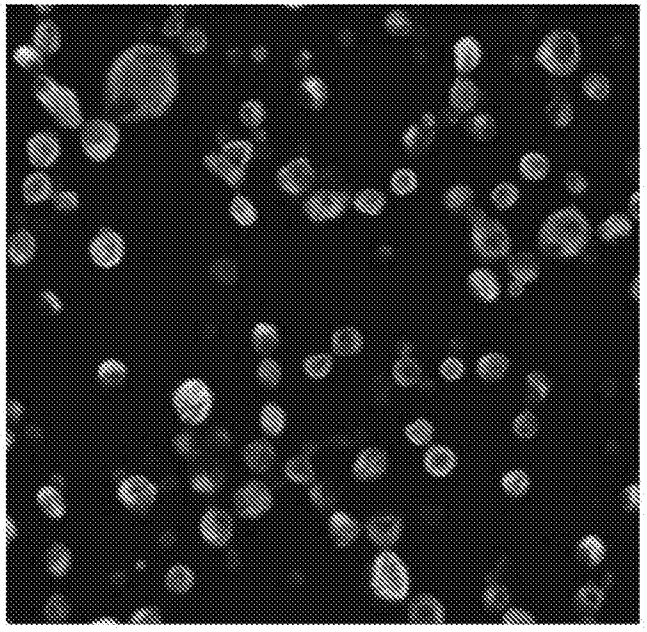


FIG. 7C

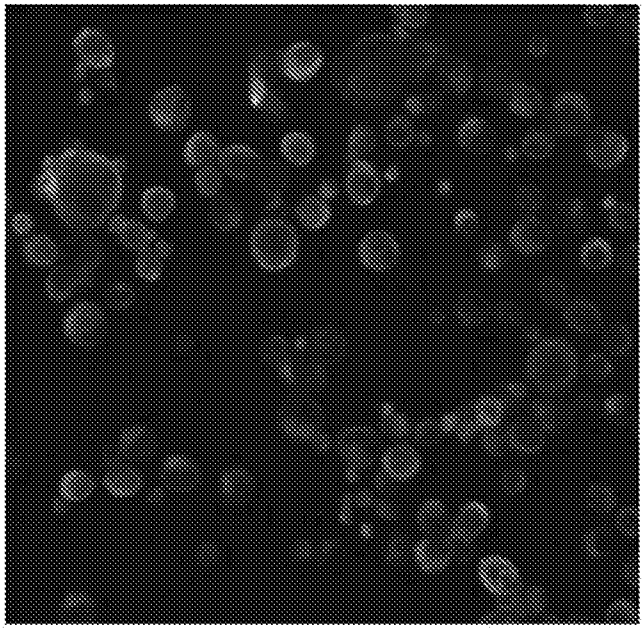


FIG. 7D

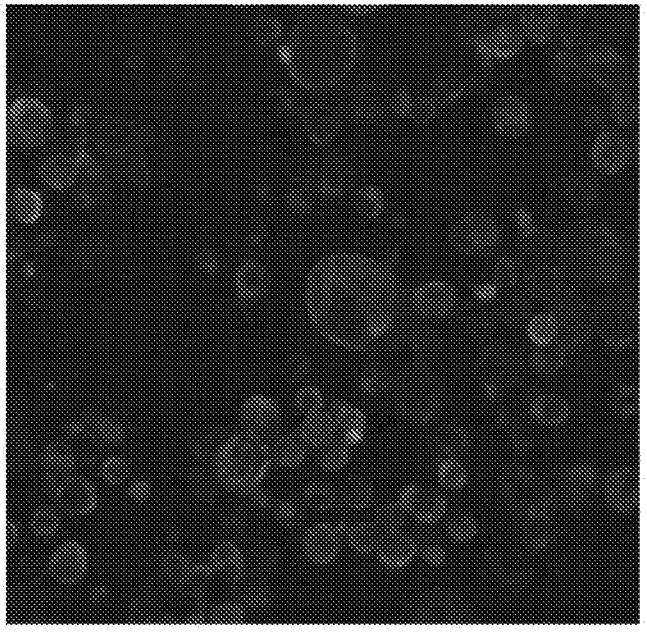


FIG. 7E

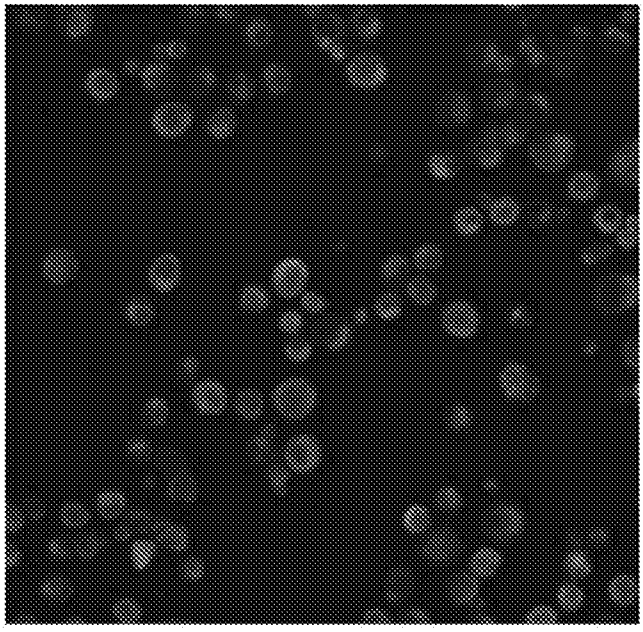


FIG. 7F

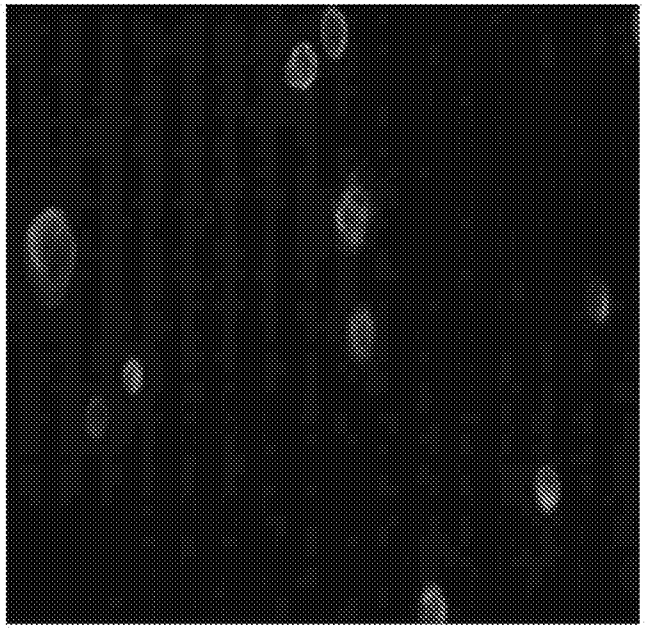


FIG. 8A

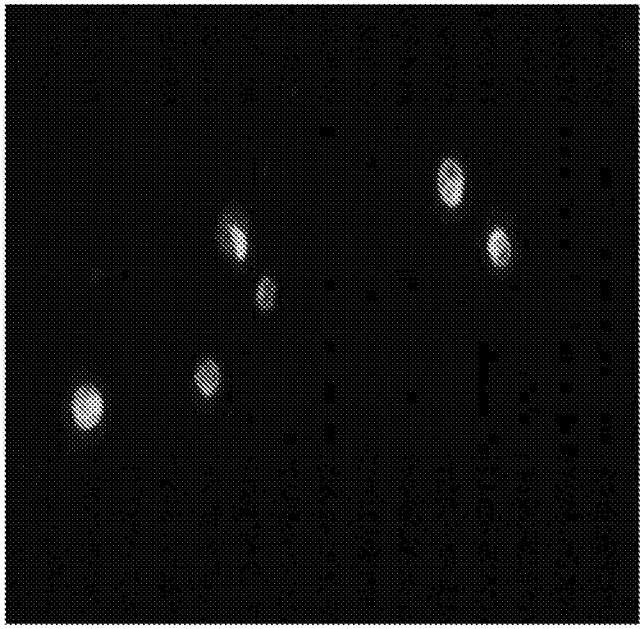


FIG. 8B

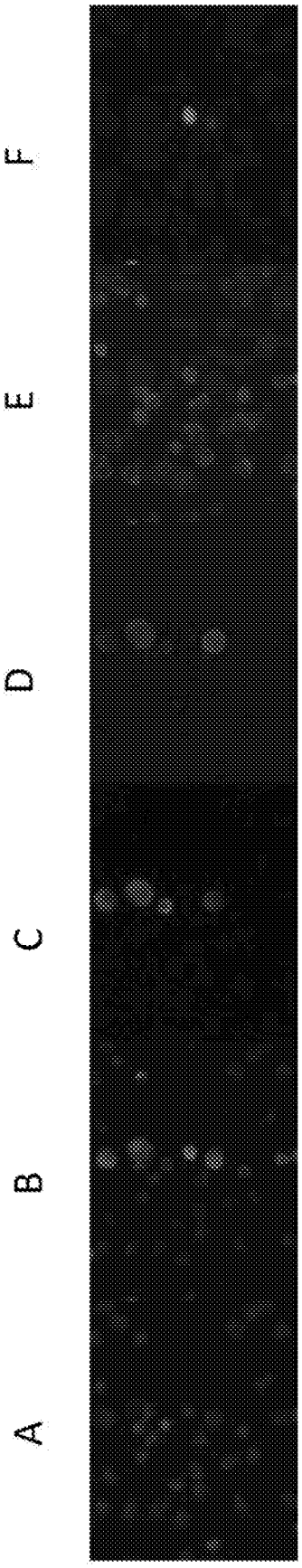



FIG. 9A

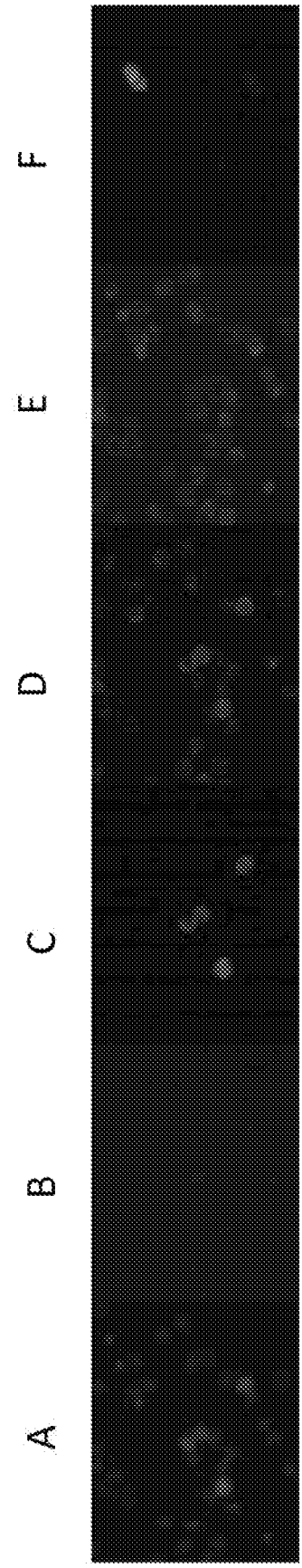



FIG. 9B

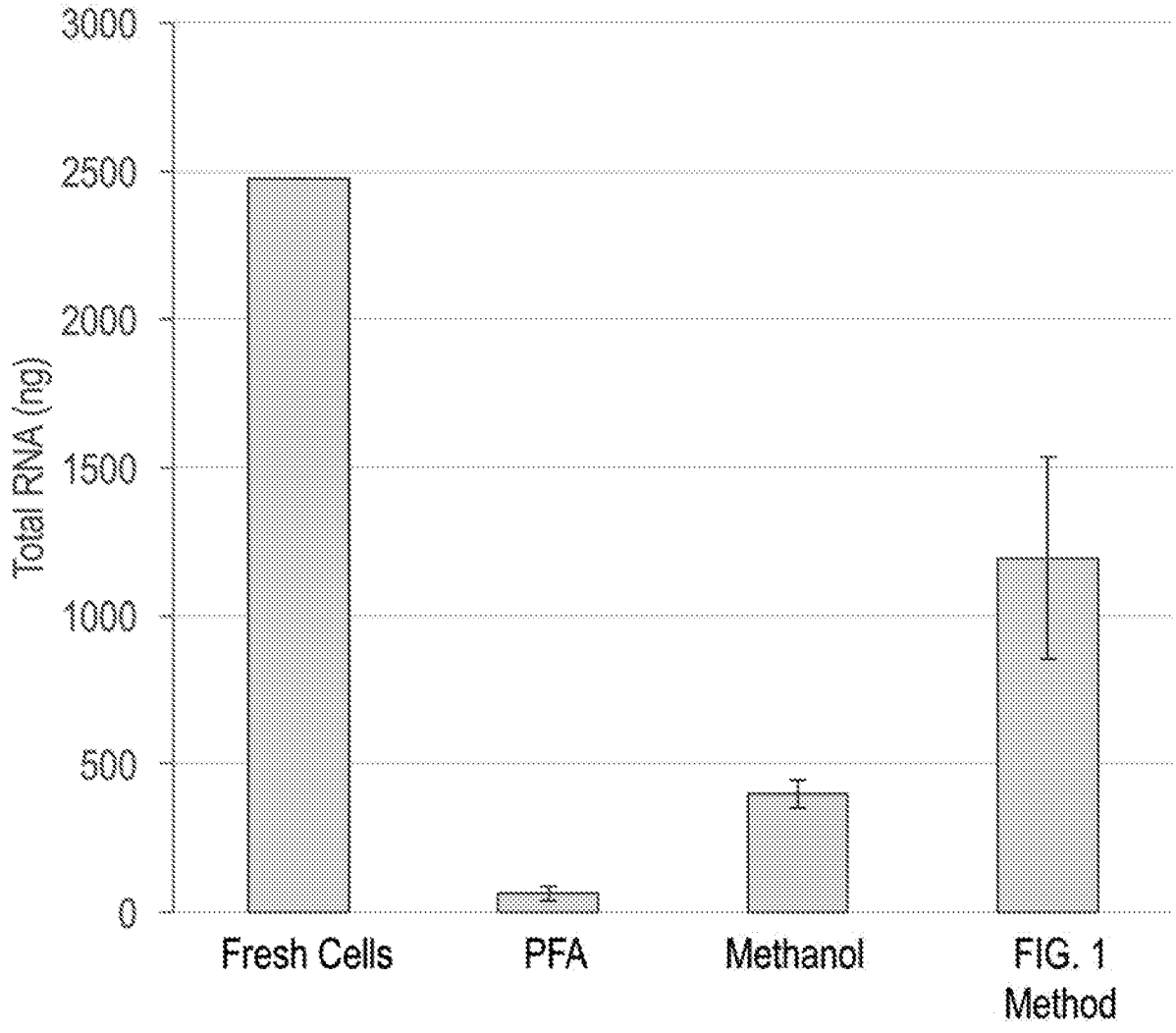

3000
2500
2000
1500
1000
500
0
Total RNA (ng)
Fresh Cells
PFA
Methanol
FIG. 1 Method

FIG. 10

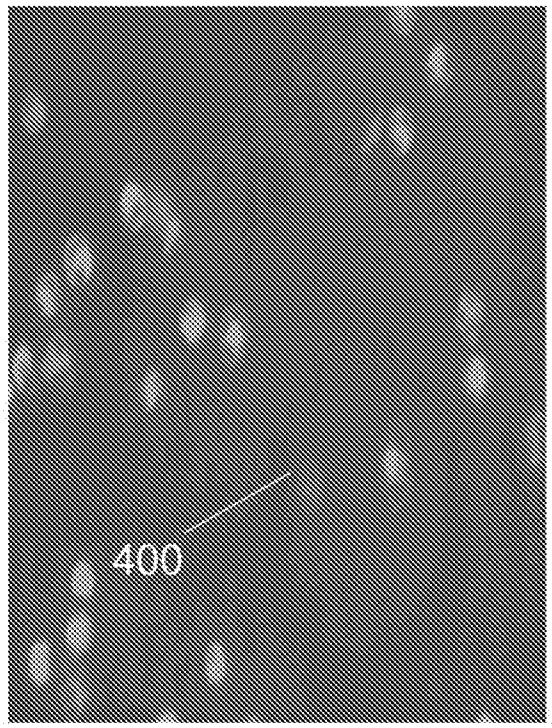



FIG. 11A

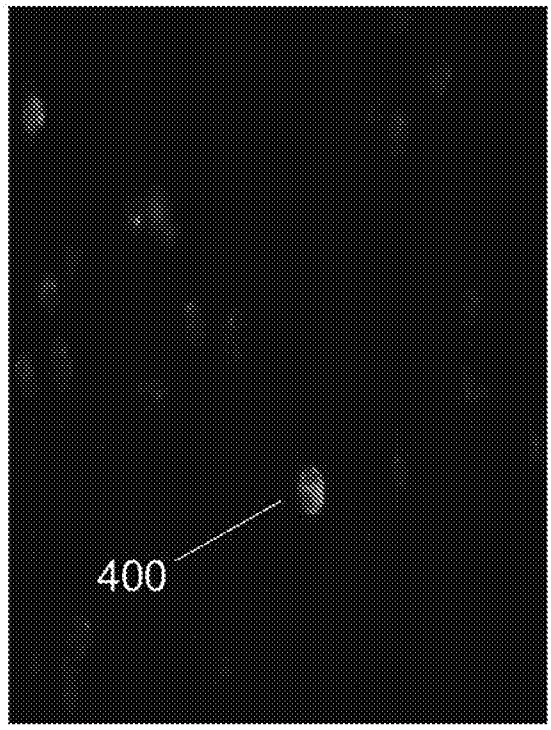



FIG. 11B

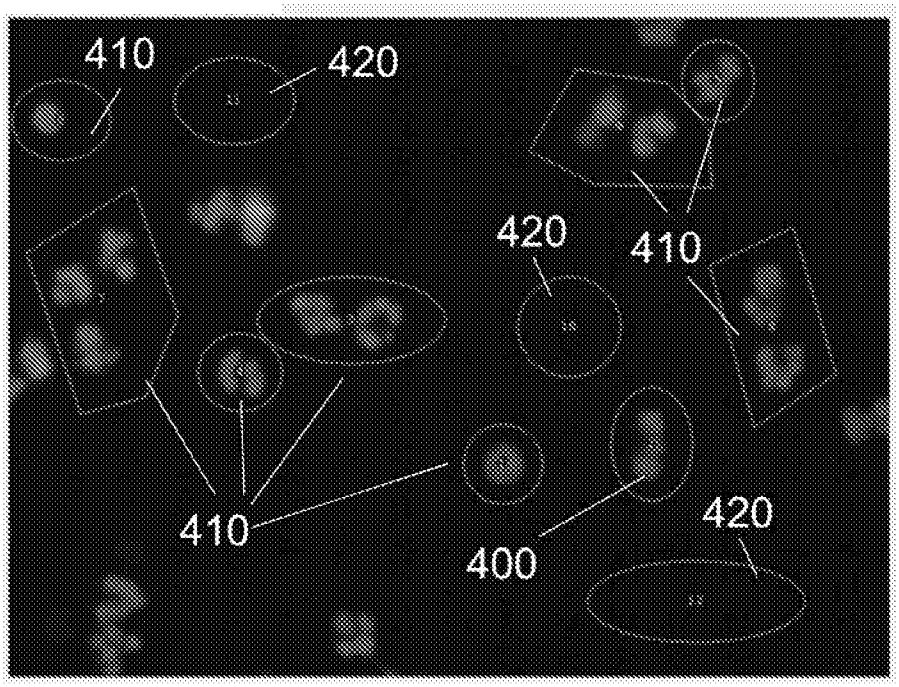



FIG. 11C

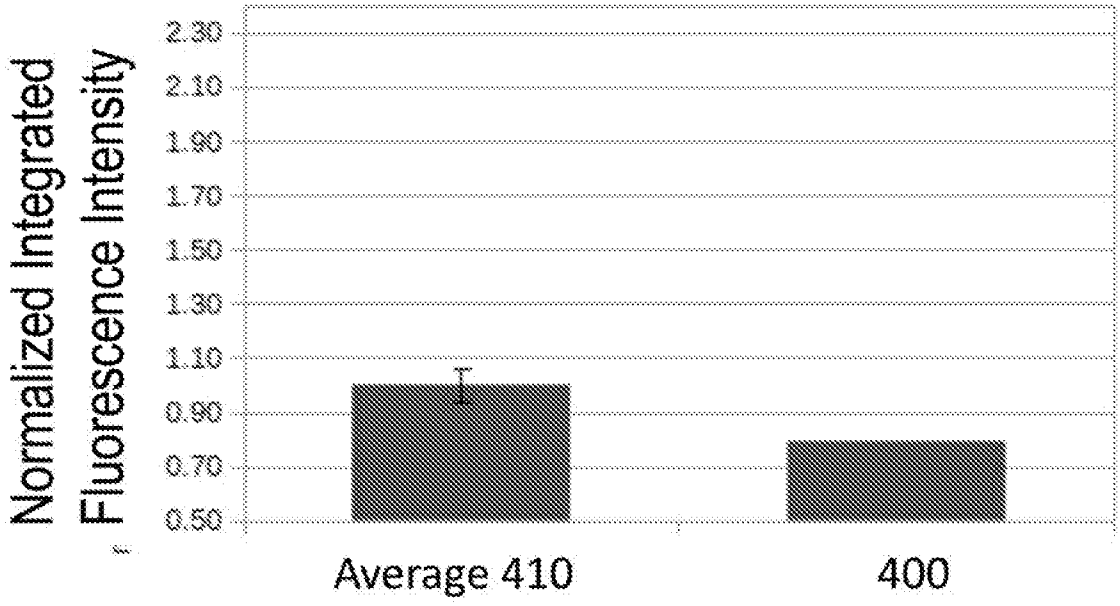



FIG. 11D

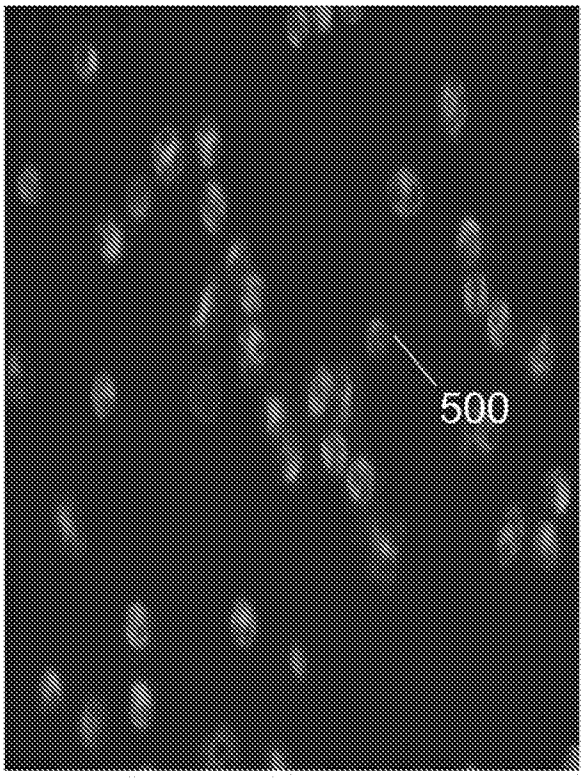



FIG. 12A

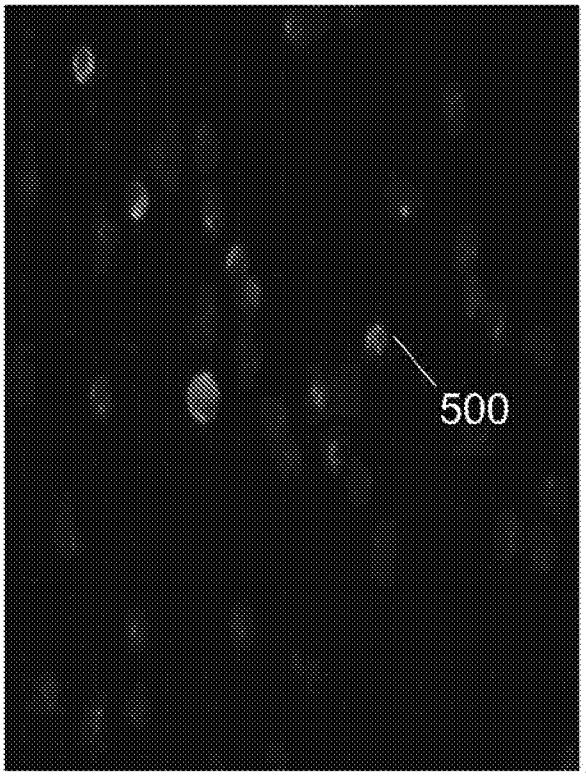



FIG. 12B

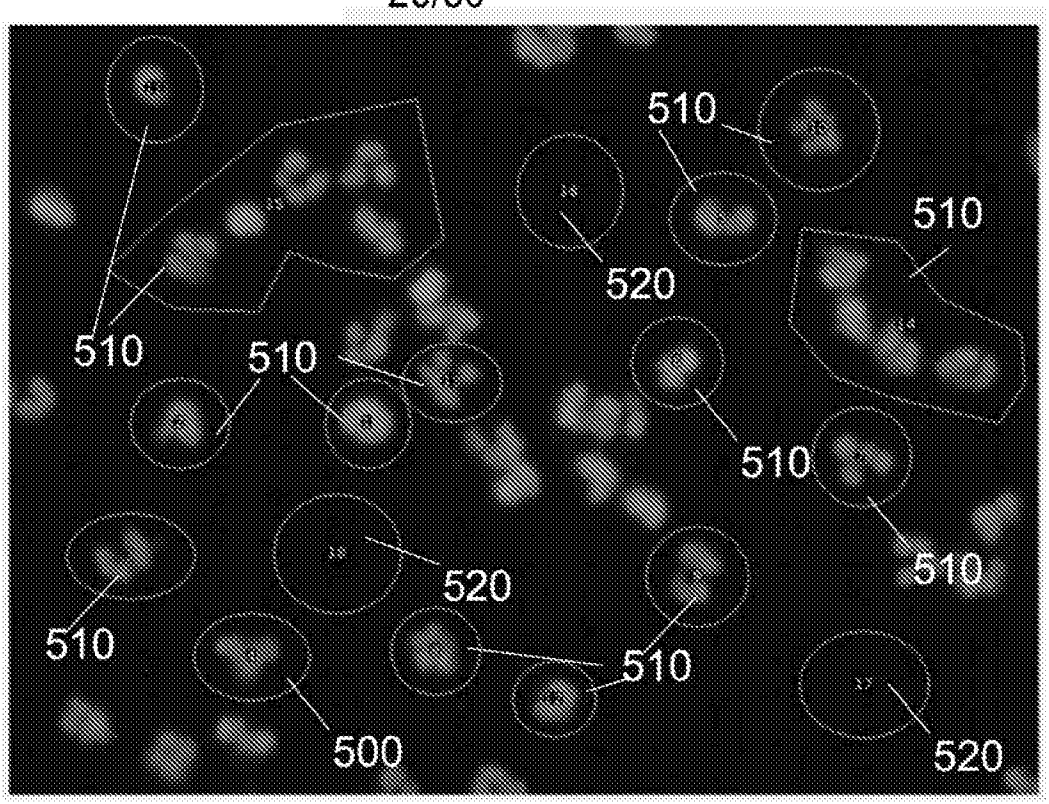



FIG. 12C

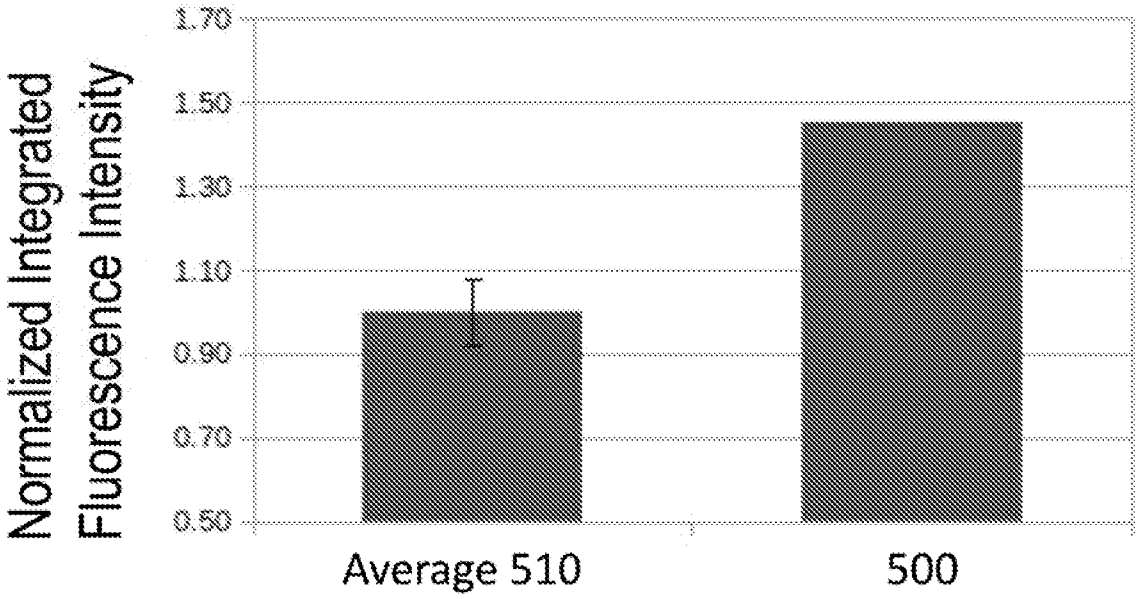



FIG. 12D

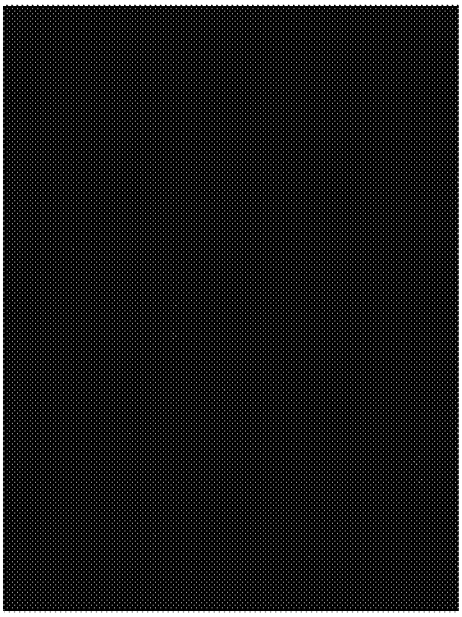


FIG. 13A

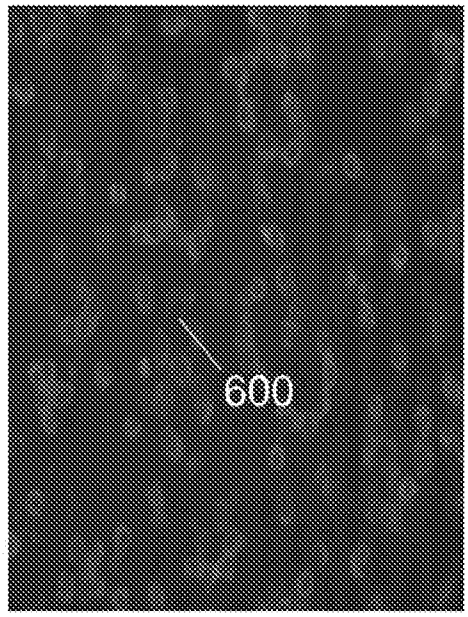



FIG. 13B

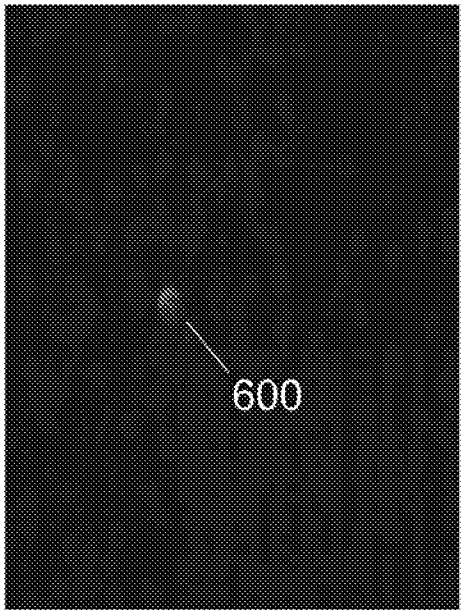



FIG. 13C

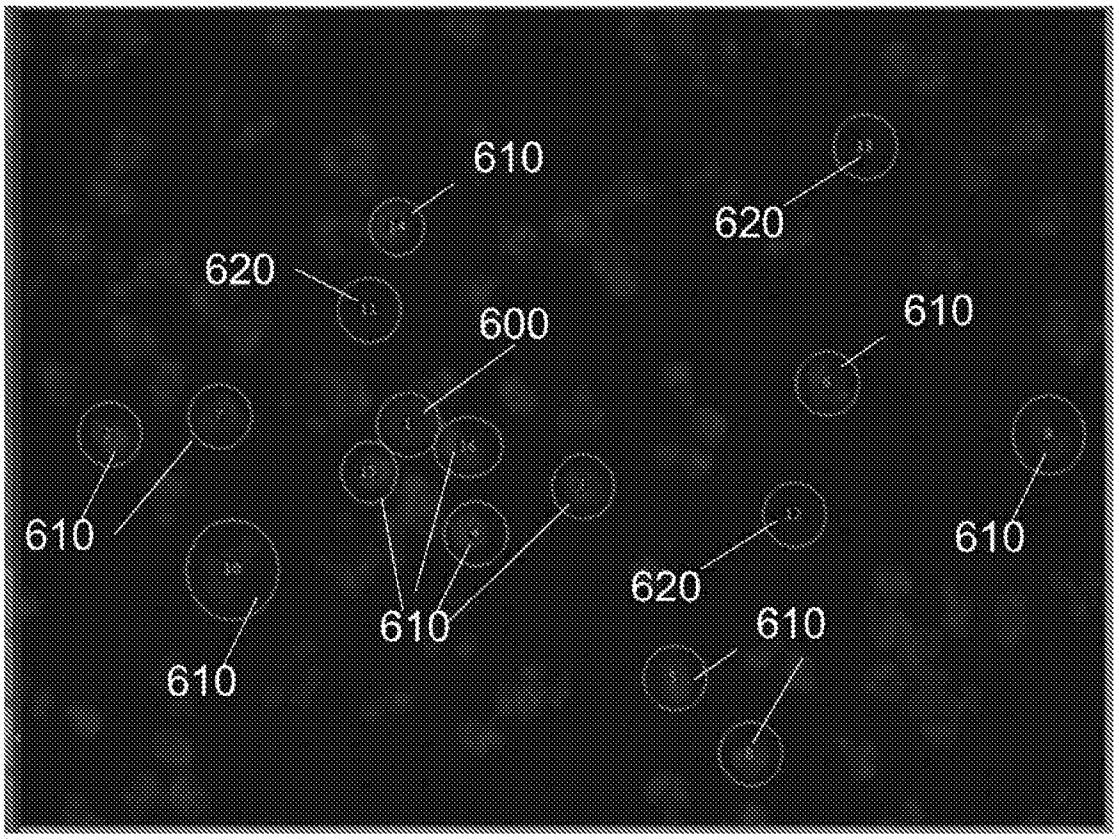



FIG. 13D

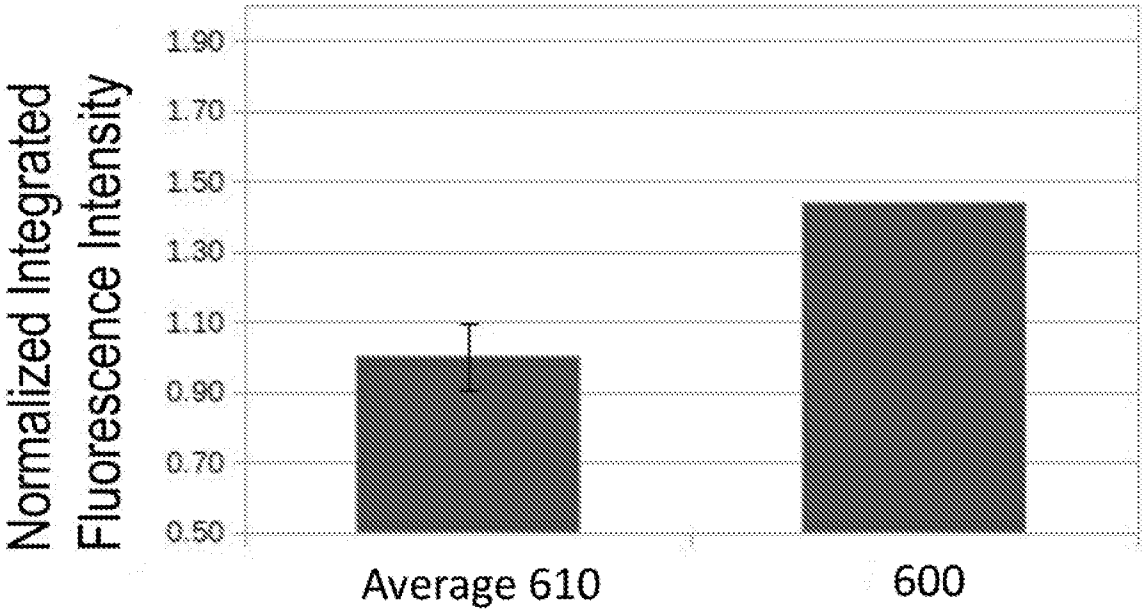



FIG. 13E

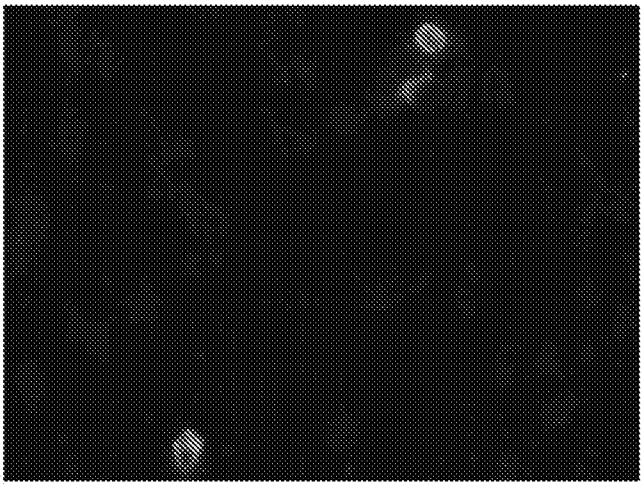


FIG. 14A

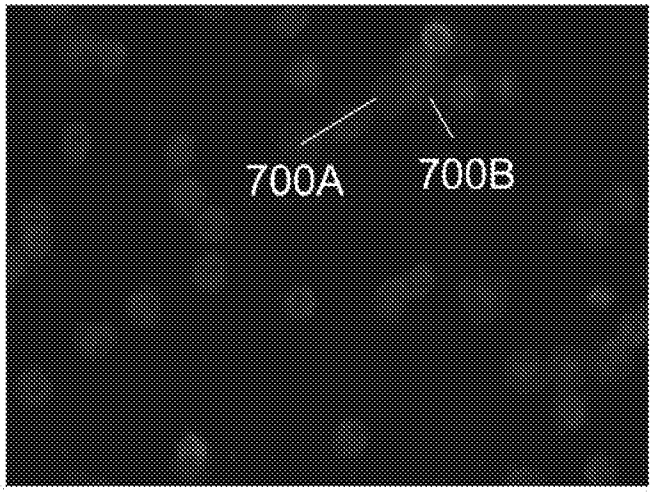



FIG. 14B

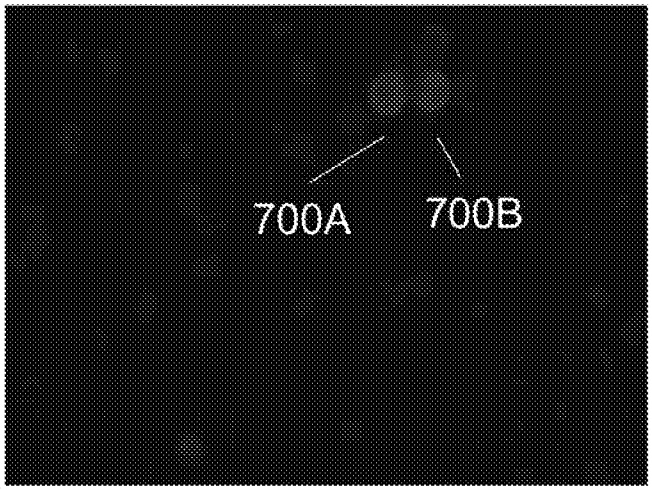



FIG. 14C

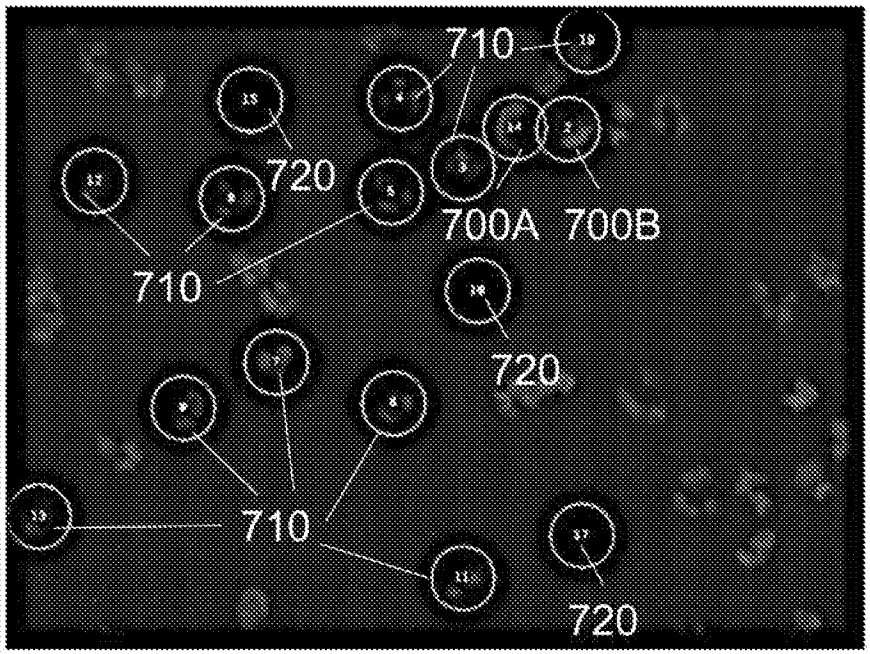



FIG. 14D

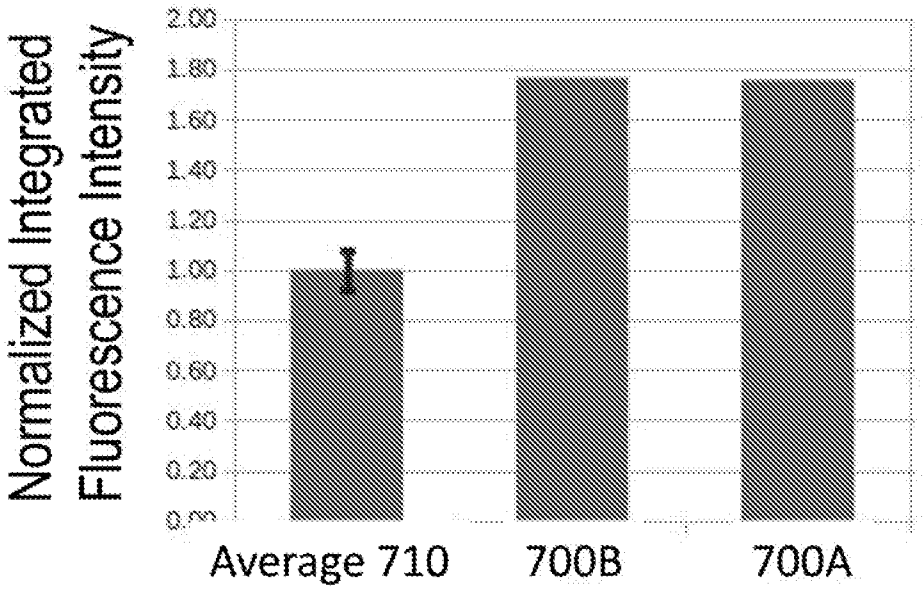



FIG. 14E

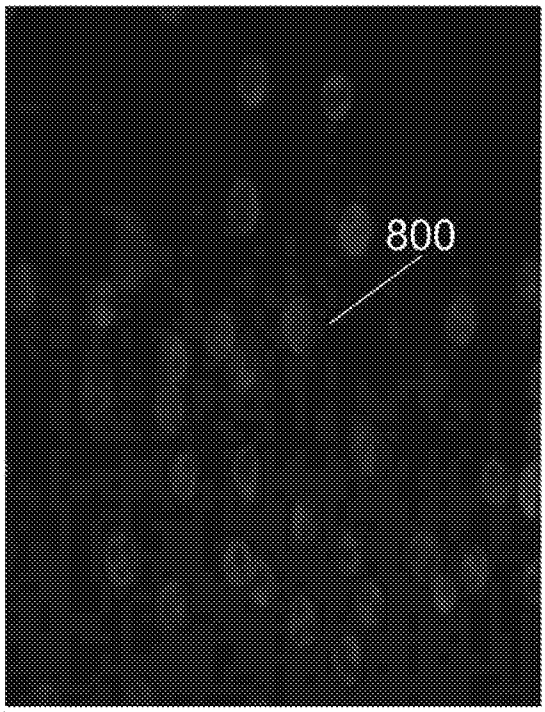



FIG. 15A

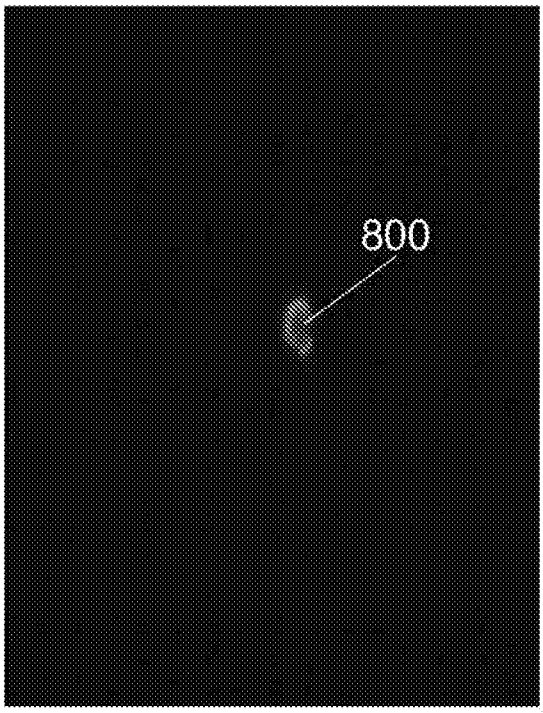



FIG. 15B

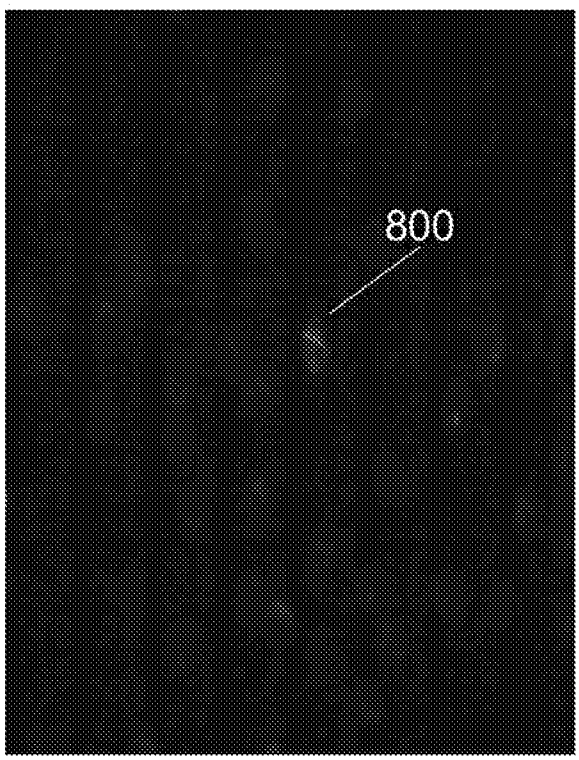



FIG. 15C

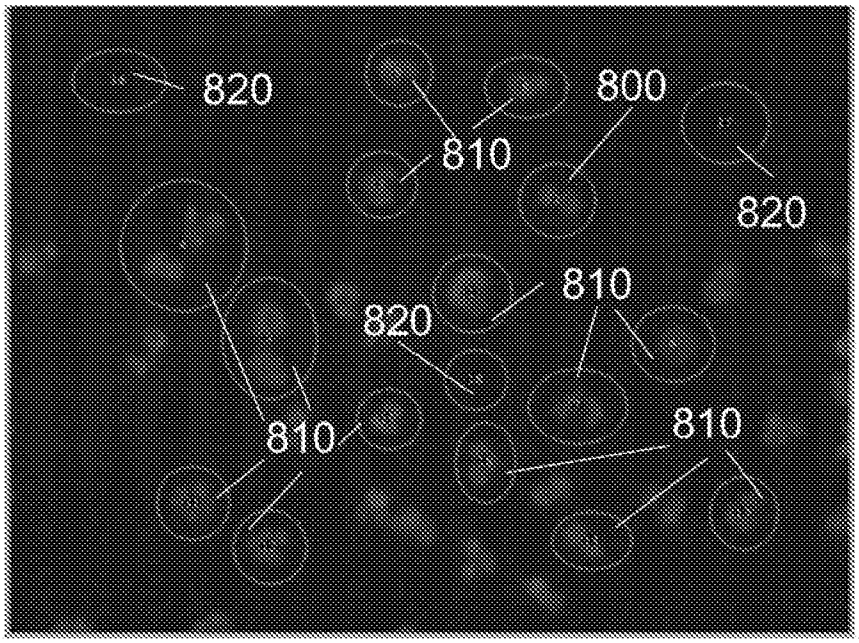



FIG. 15D

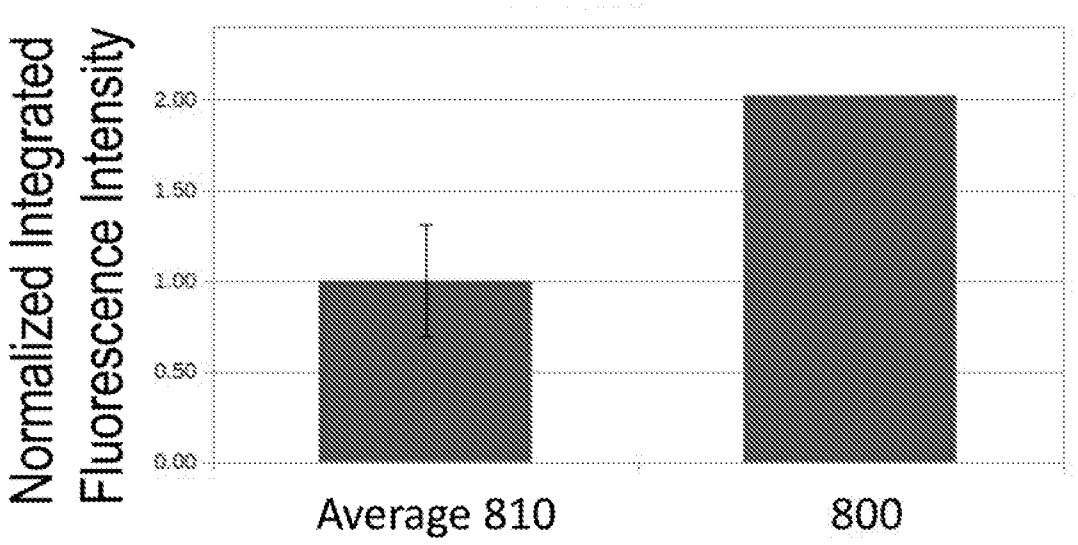



FIG. 15E

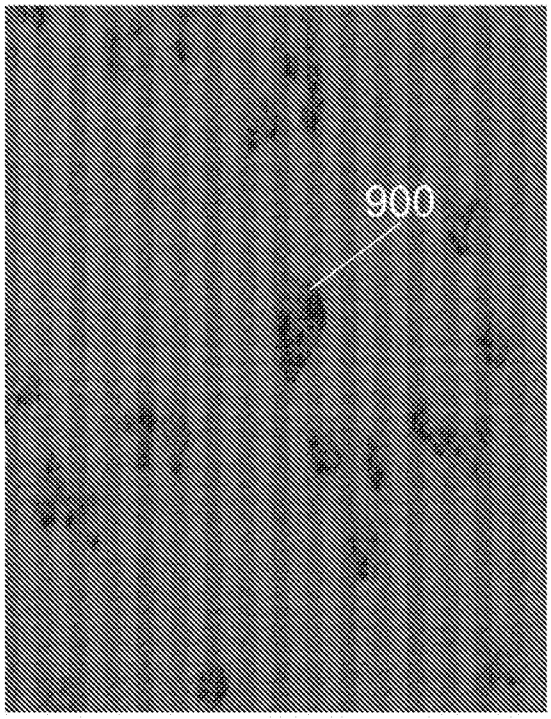



FIG. 16A

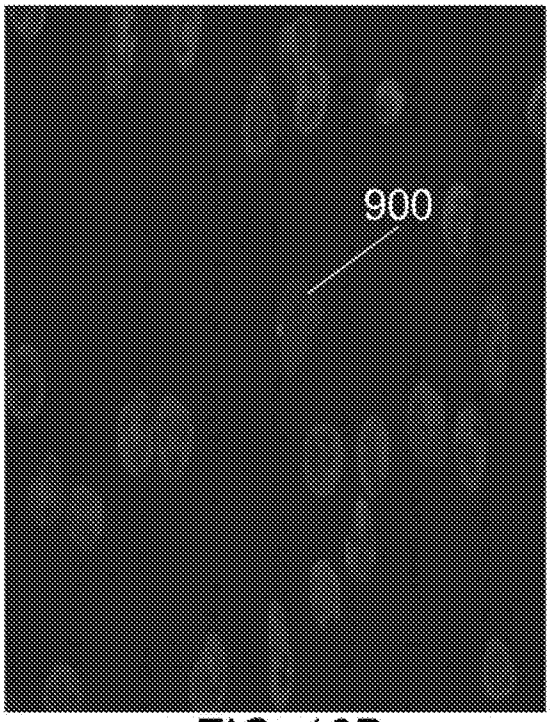



FIG. 16B

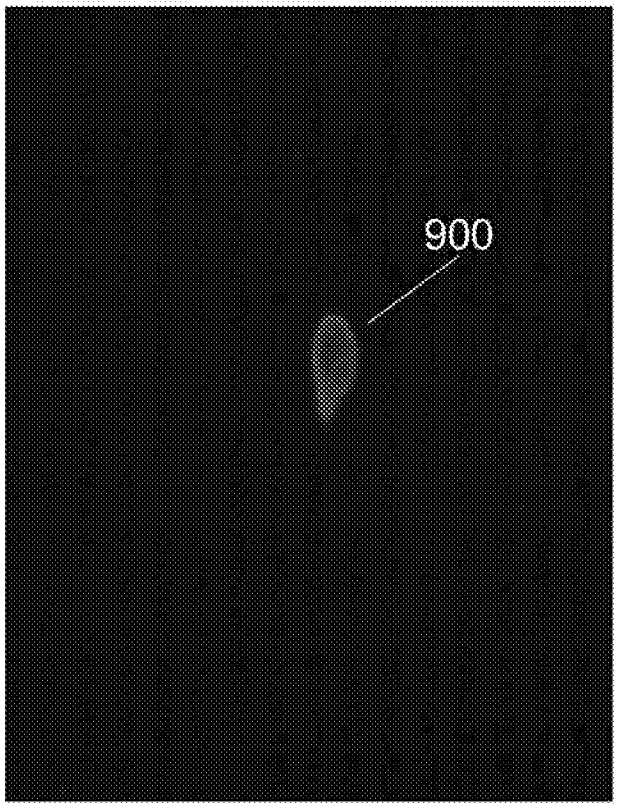



FIG. 16C

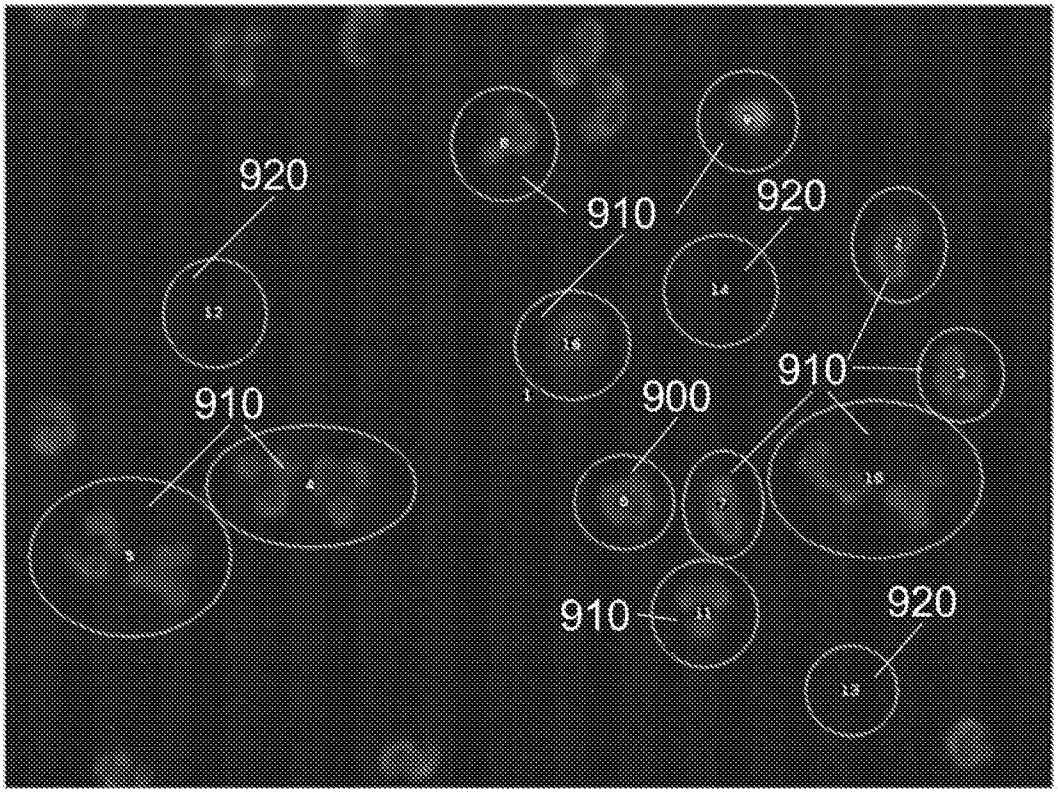



FIG. 16D

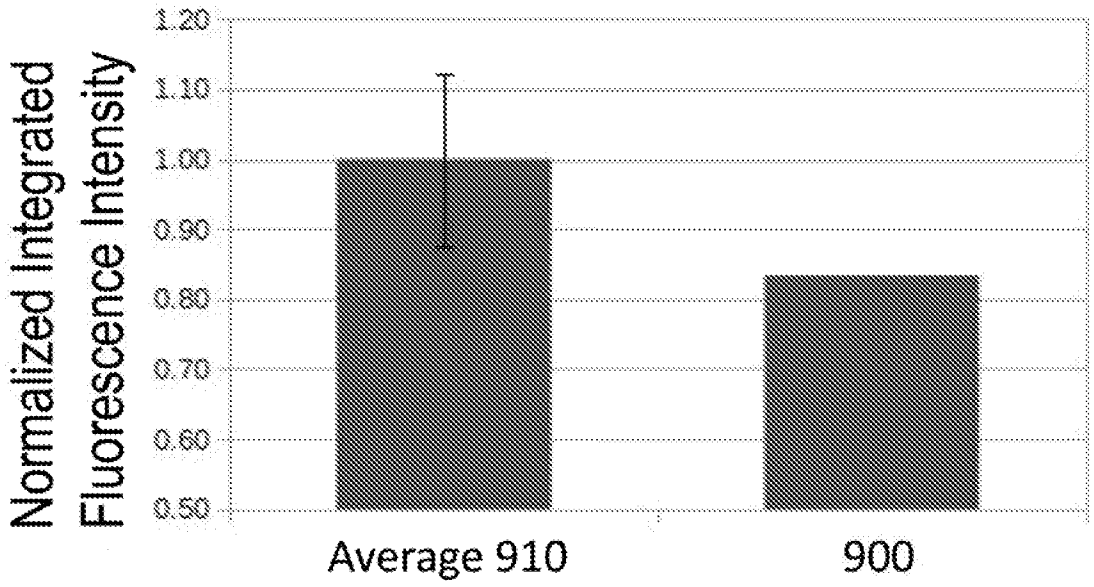



FIG. 16E

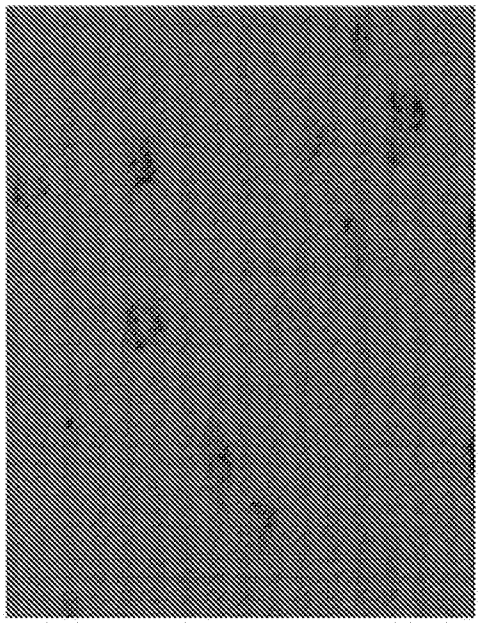


FIG. 17A

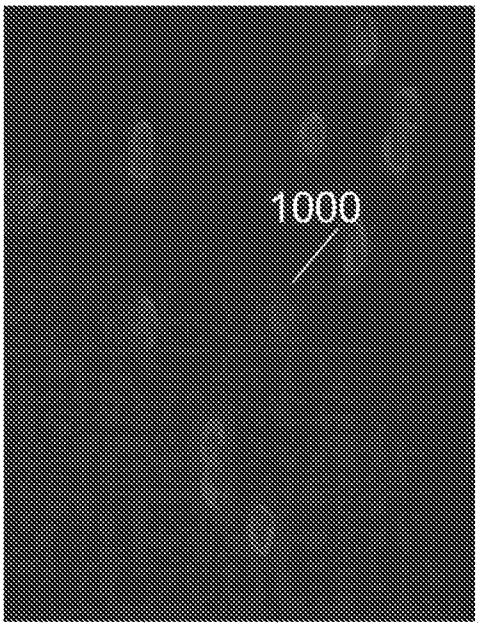



FIG. 17B

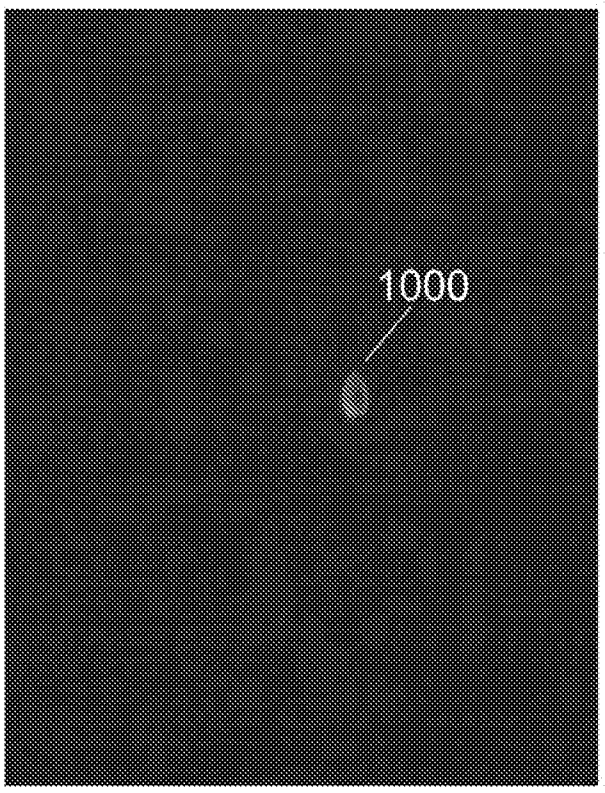



FIG. 17C

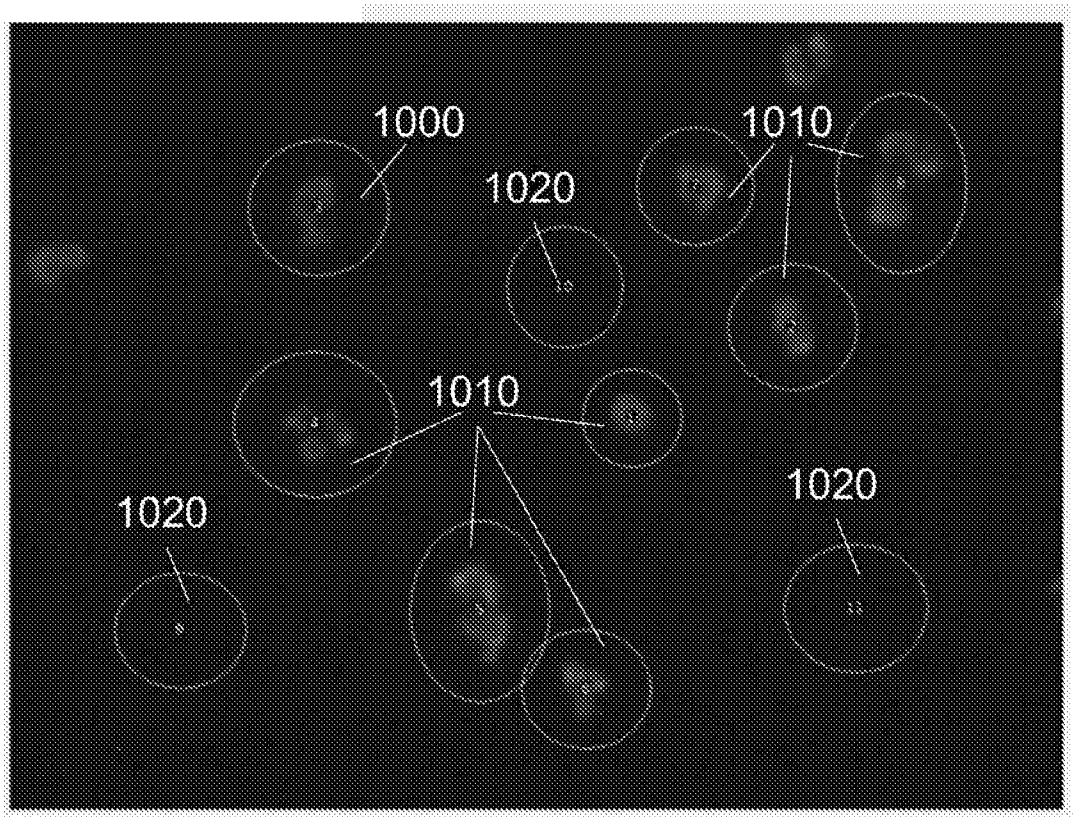



FIG. 17D

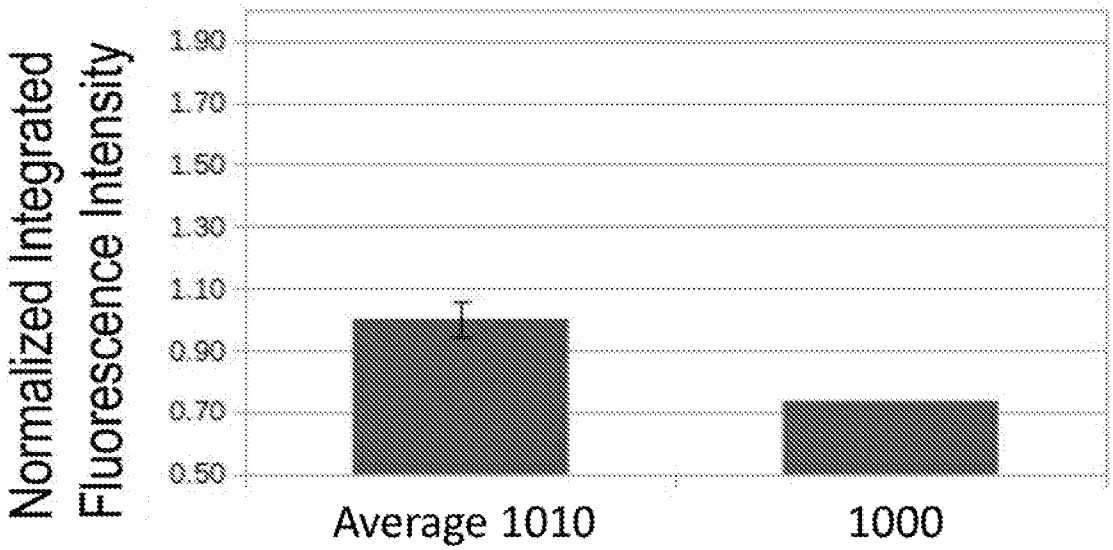



FIG. 17E