
OH OH OH OH OH OH OH OH OH OH OH OH OH OH OH OH OH OH OH OH
102
104A
106
108
110

FIG. 1A

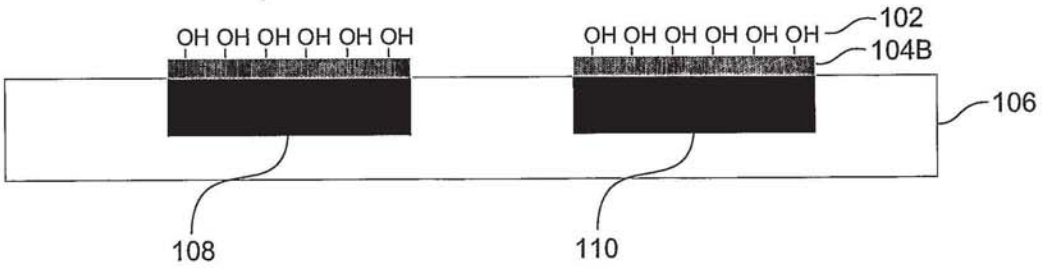

OH OH OH OH OH OH
OH OH OH OH OH OH
102
104B
106
108
110

FIG. 1B

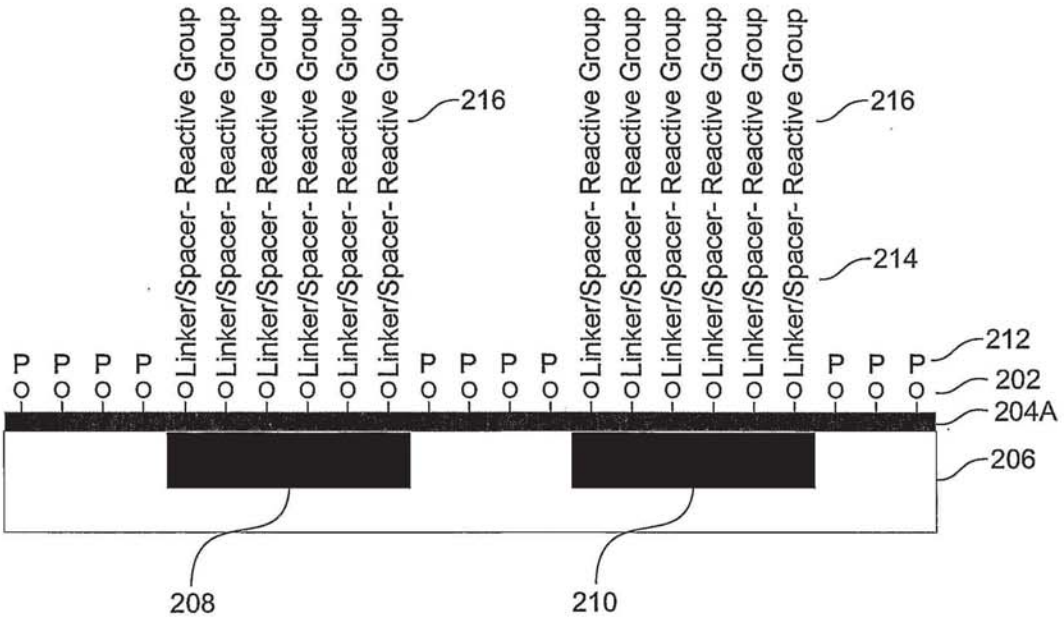

Linker/Spacer- Reactive Group
216
214
212
202
204A
206
208
210
P

FIG. 2A

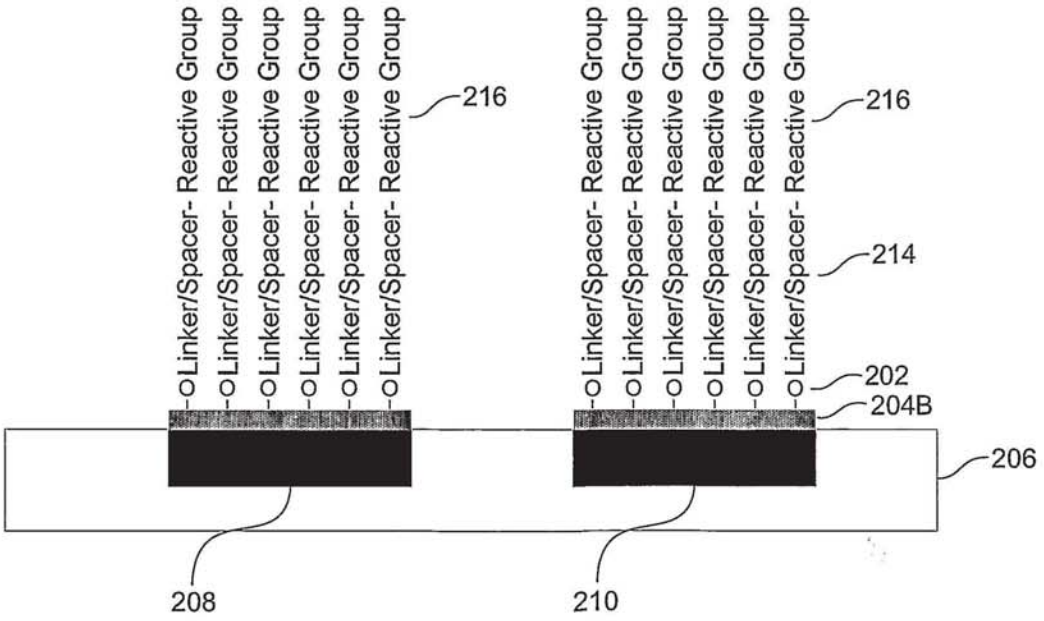

Linker/Spacer- Reactive Group
216
214
202
204B
206
208
210

FIG. 2B

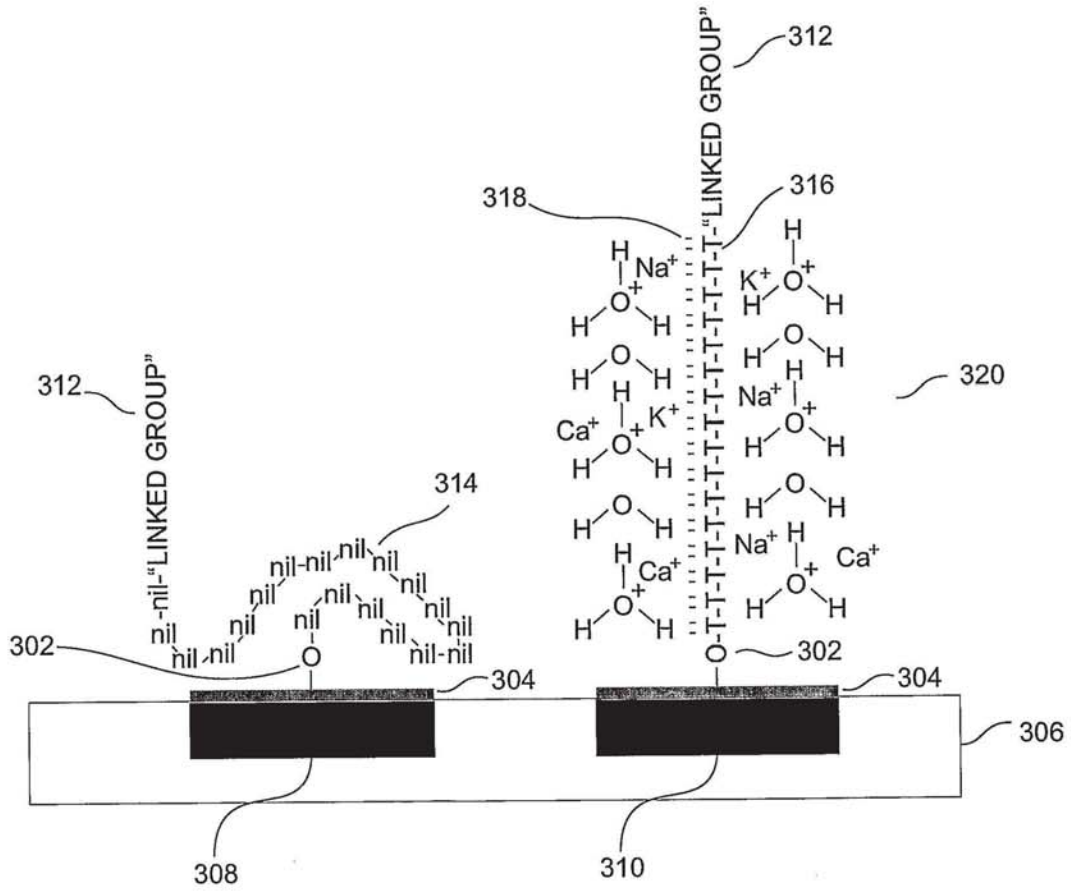

312
-nil-"LINKED GROUP"
318
316
O-T-T-T-T-T-T-T-T-T-T-T-T-T-"LINKED GROUP"
320
314
302
304
306
308
310

FIG. 3

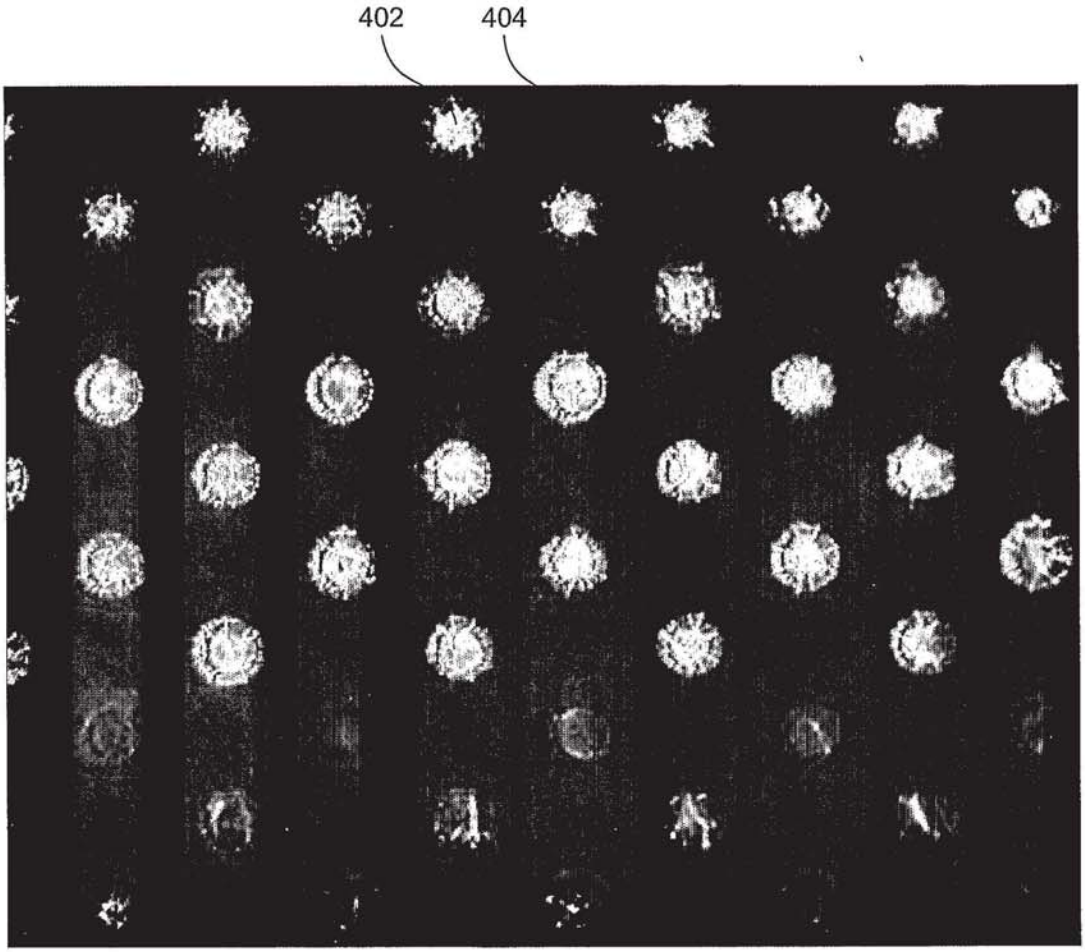


FIG. 4

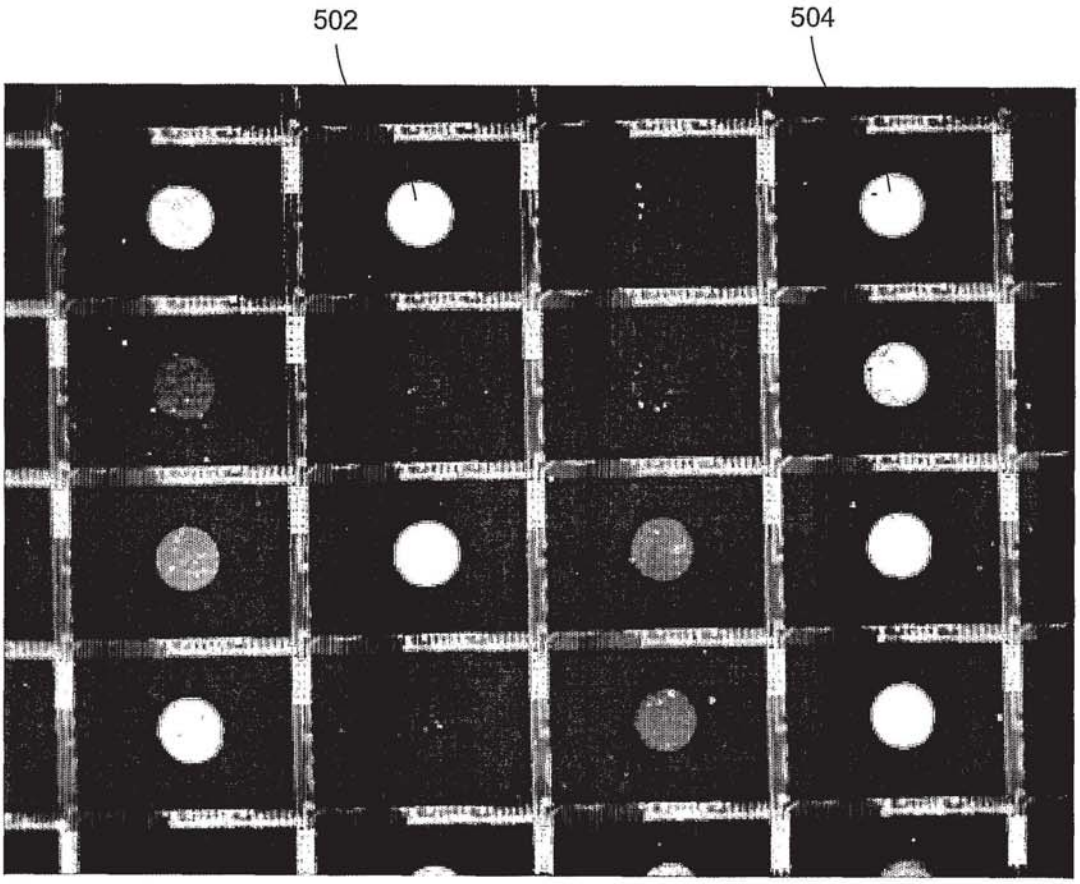


FIG. 5

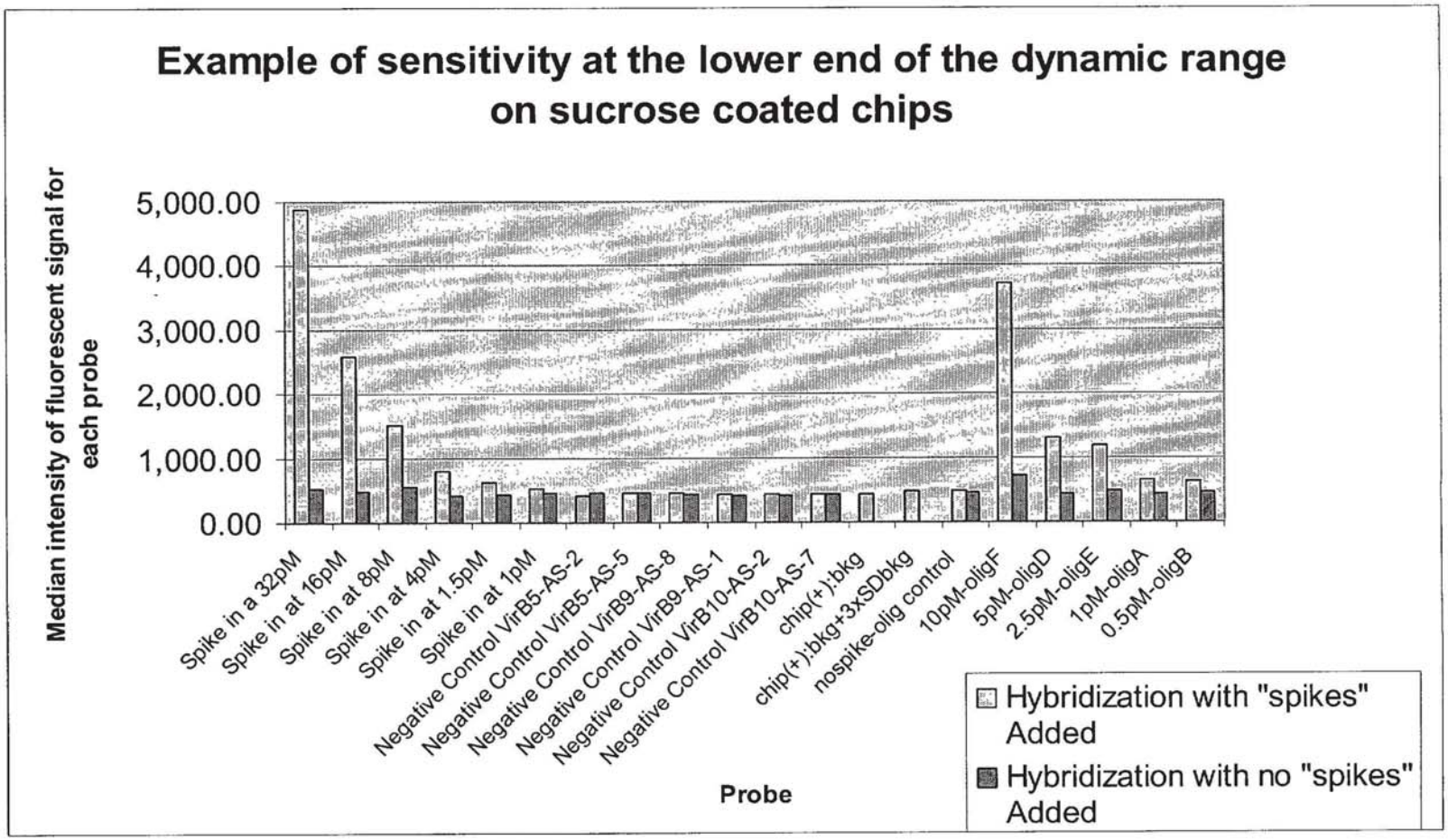

Example of sensitivity at the lower end of the dynamic range on sucrose coated chips
Median intensity of fluorescent signal for each probe
5,000.00
4,000.00
3,000.00
2,000.00
1,000.00
0.00
Spike in a 32pM
Spike in at 16pM
Spike in at 8pM
Spike in at 4pM
Spike in at 1.5pM
Spike in at 1pM
Negative Control VirB5-AS-2
Negative Control VirB5-AS-5
Negative Control VirB9-AS-8
Negative Control VirB9-AS-1
Negative Control VirB10-AS-2
Negative Control VirB10-AS-7
chip(+):bkg
chip(+):bkg+3xSDbkg
nospike-olig control
10pM-oligF
5pM-oligD
2.5pM-oligE
1pM-oligA
0.5pM-oligB
Probe
Hybridization with "spikes" Added
Hybridization with no "spikes" Added

FIG. 6

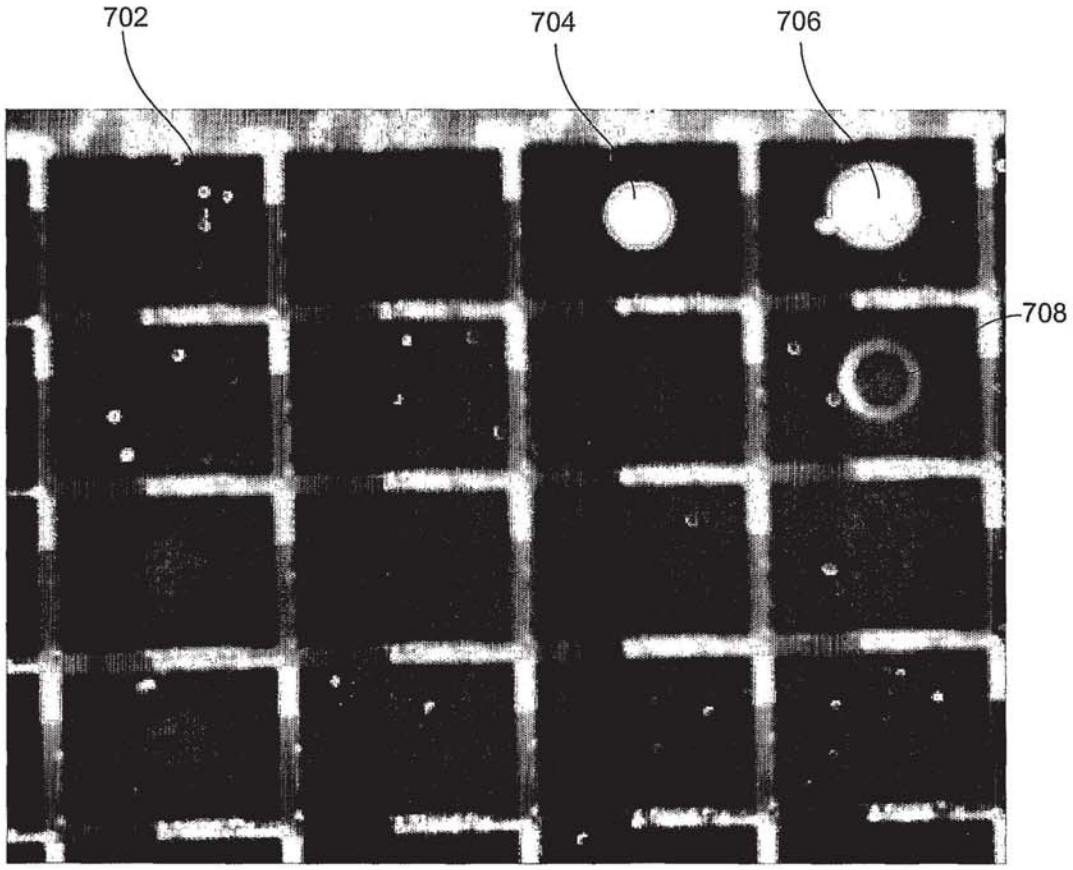


FIG. 7

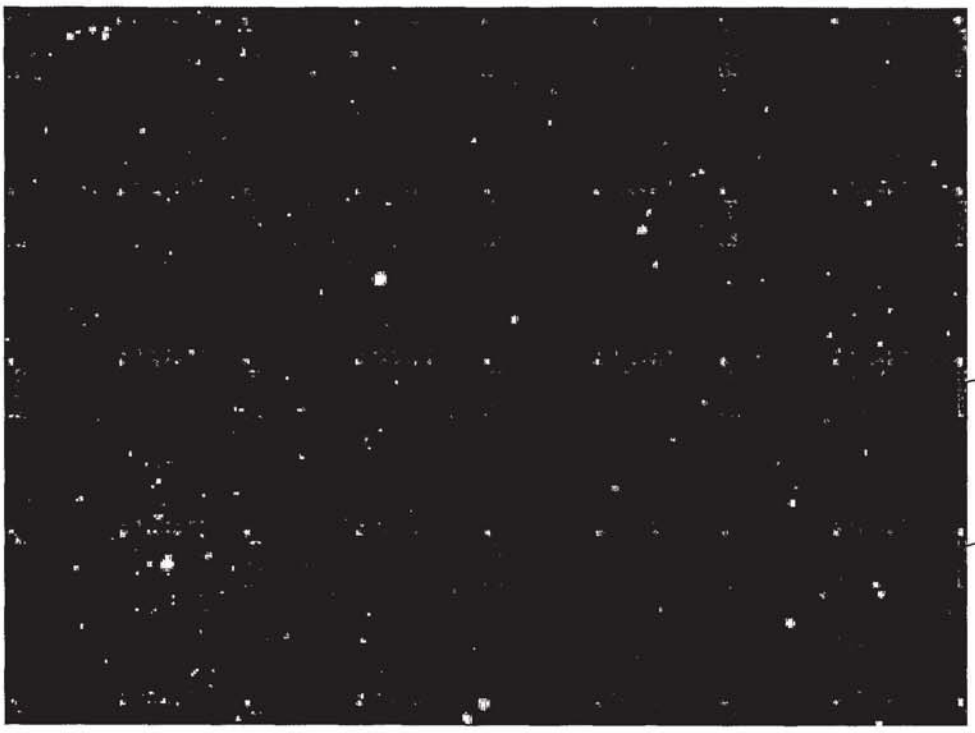
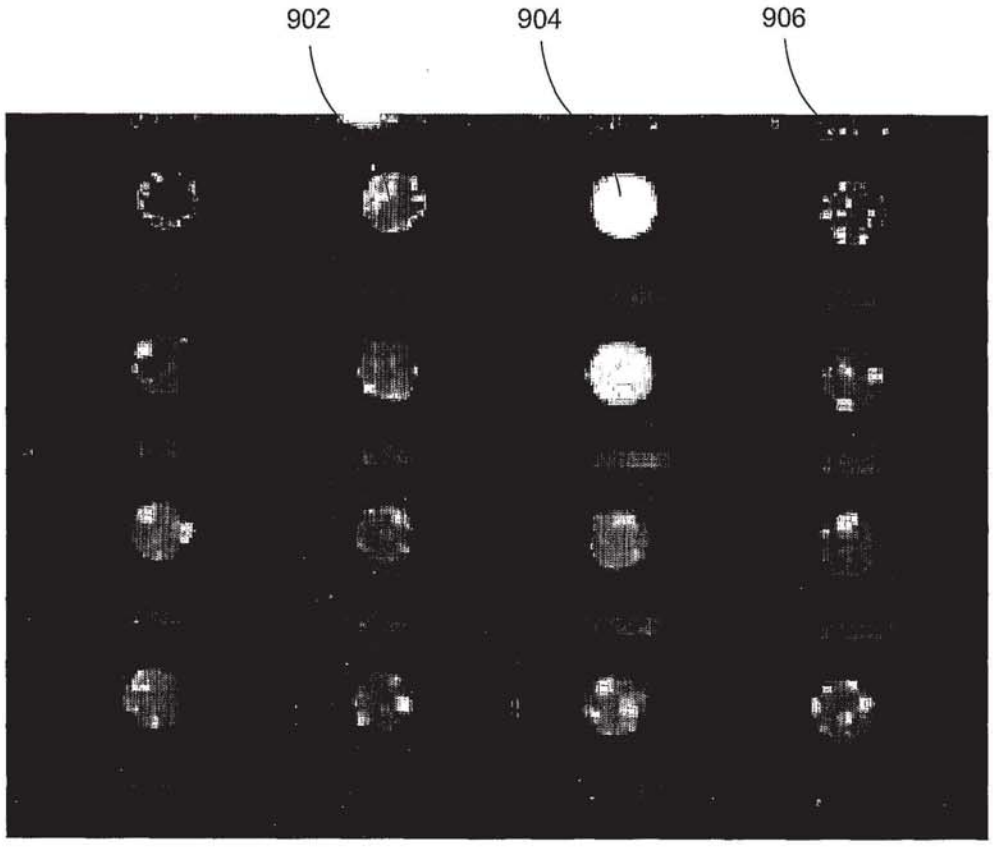


FIG. 8



N-Hydroxysuccinimide

FIG. 9

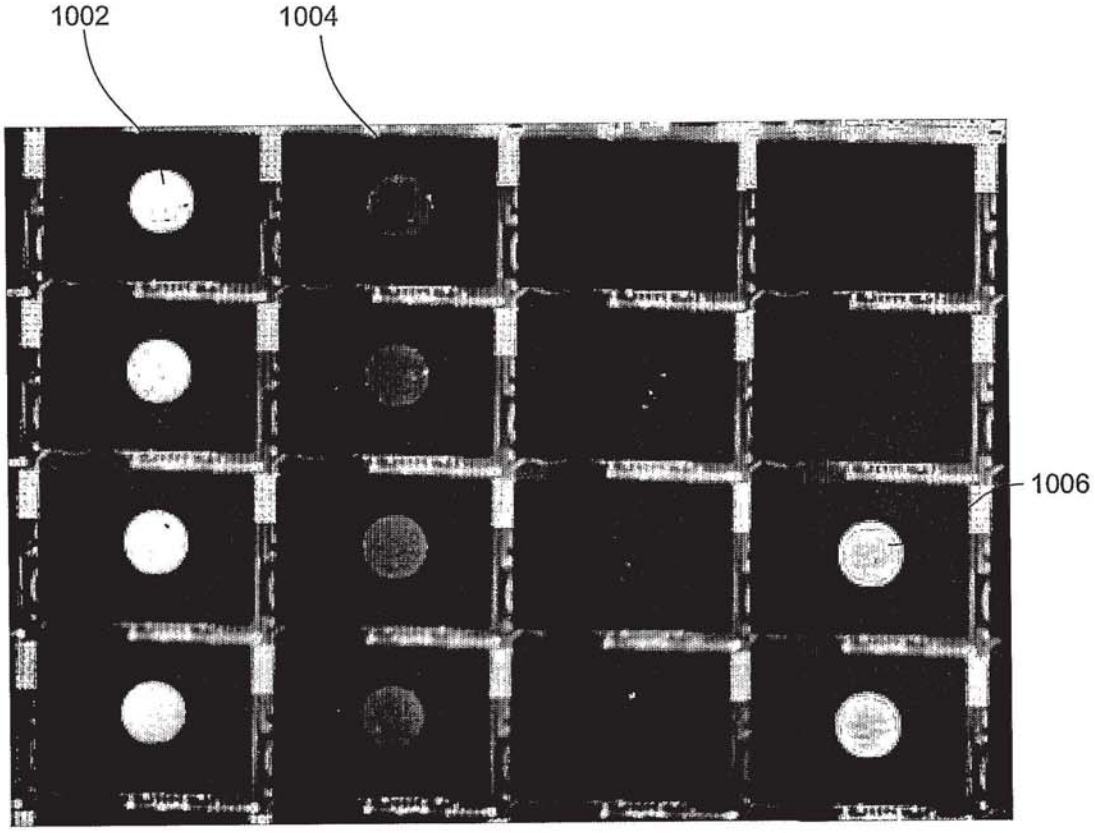


FIG. 10

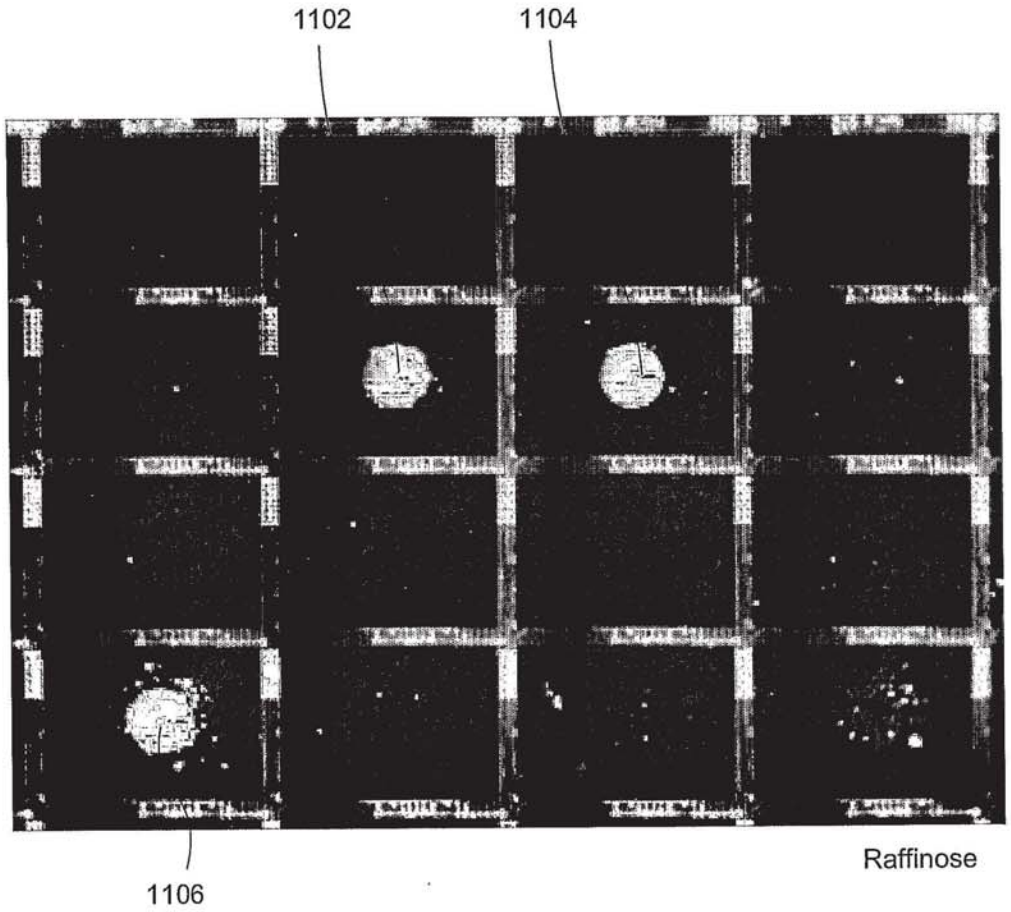


FIG. 11

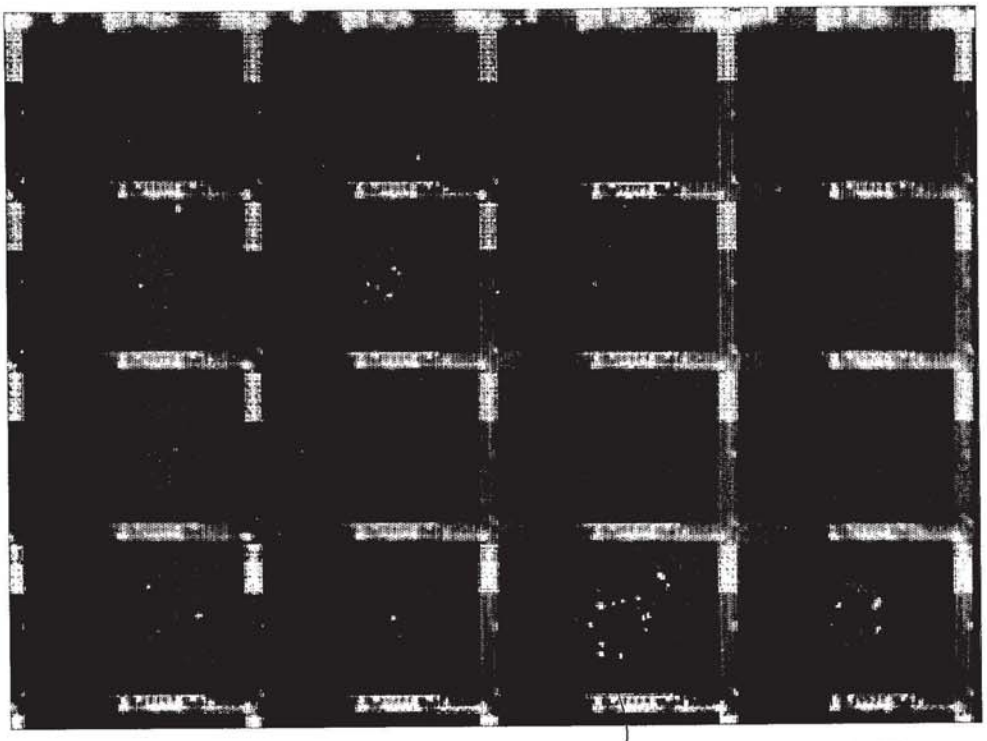


FIG. 12

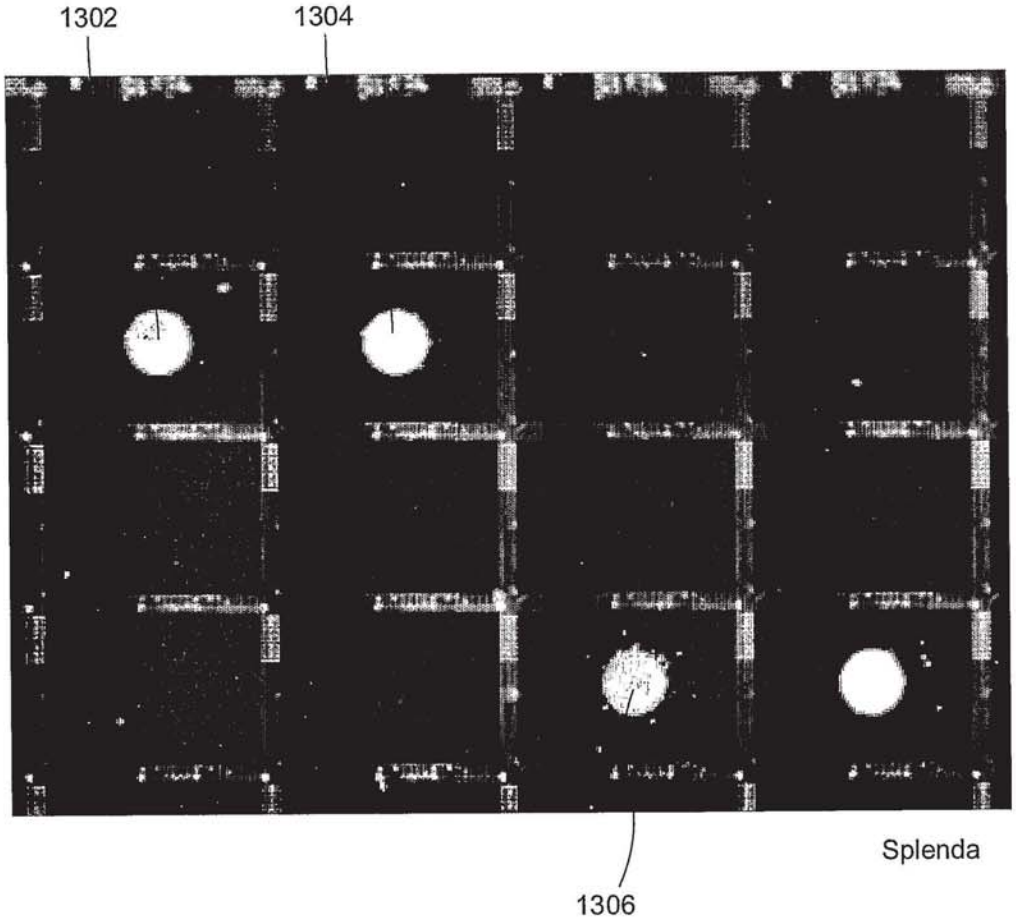


FIG. 13

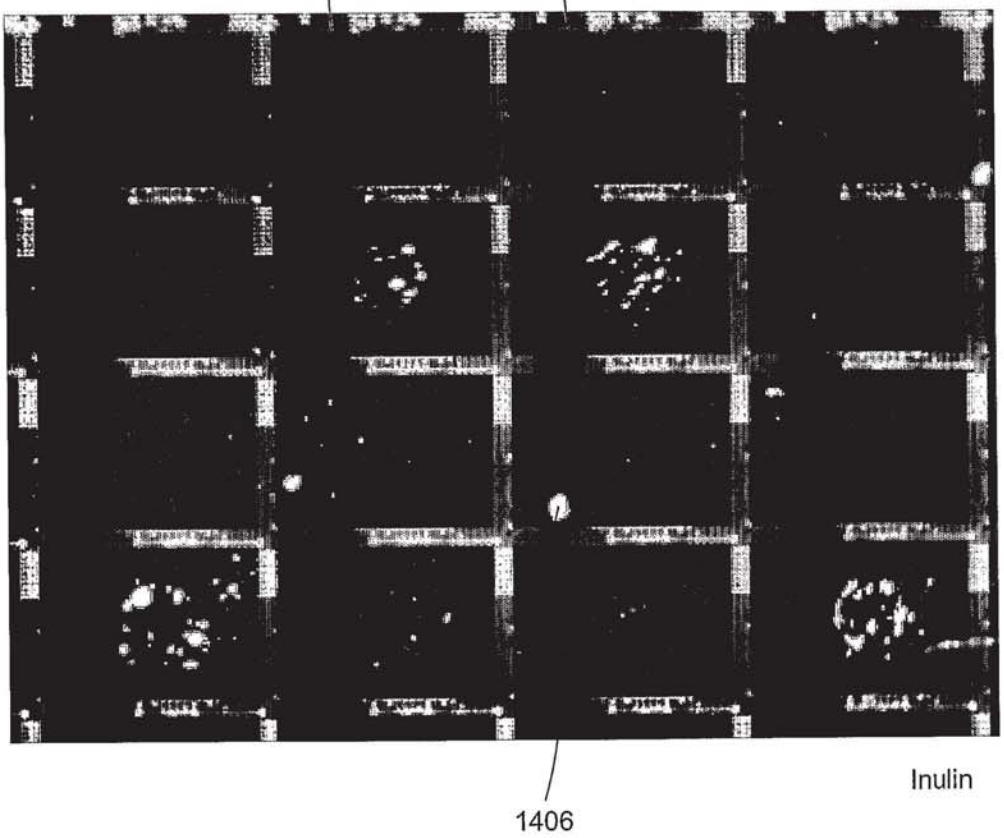


FIG. 14

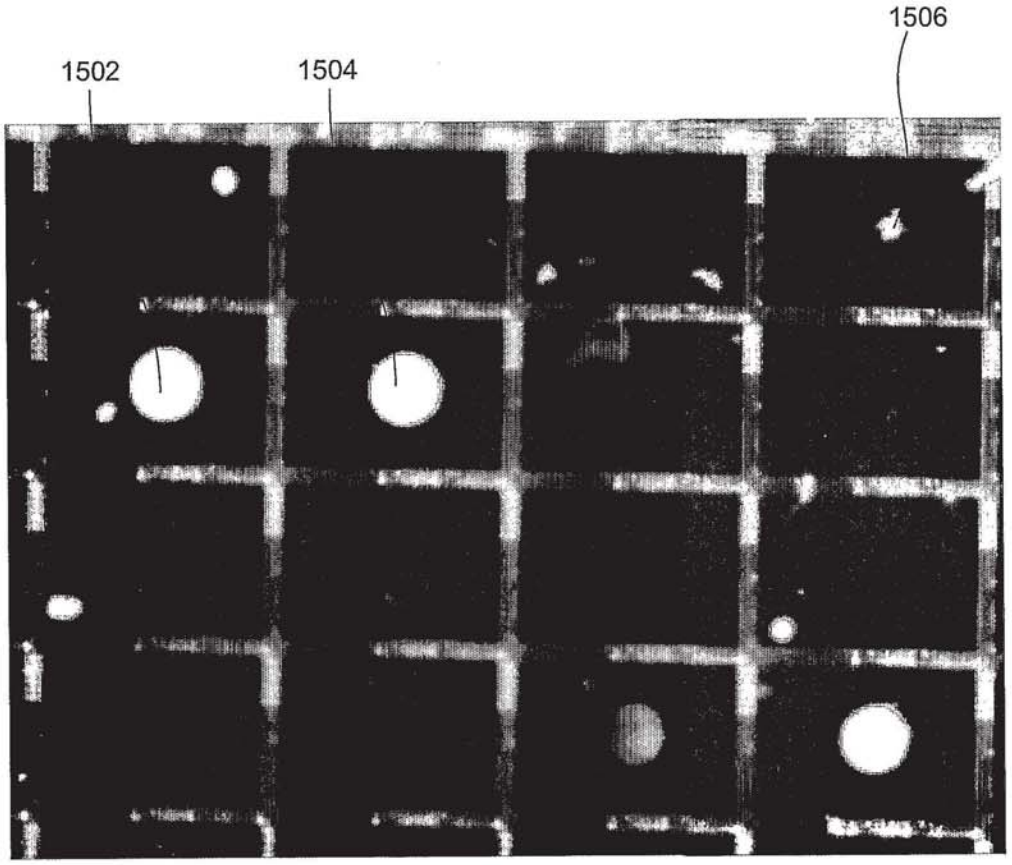
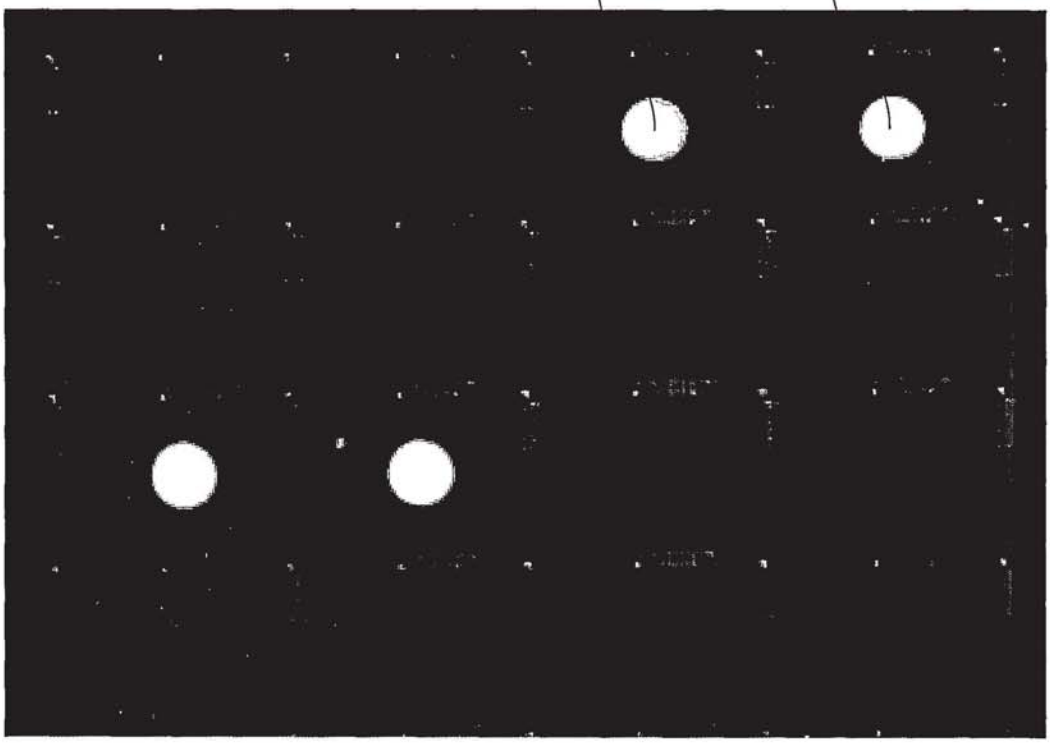


FIG. 15



Polyethylene glycol
Molecular weight 8000

FIG. 16

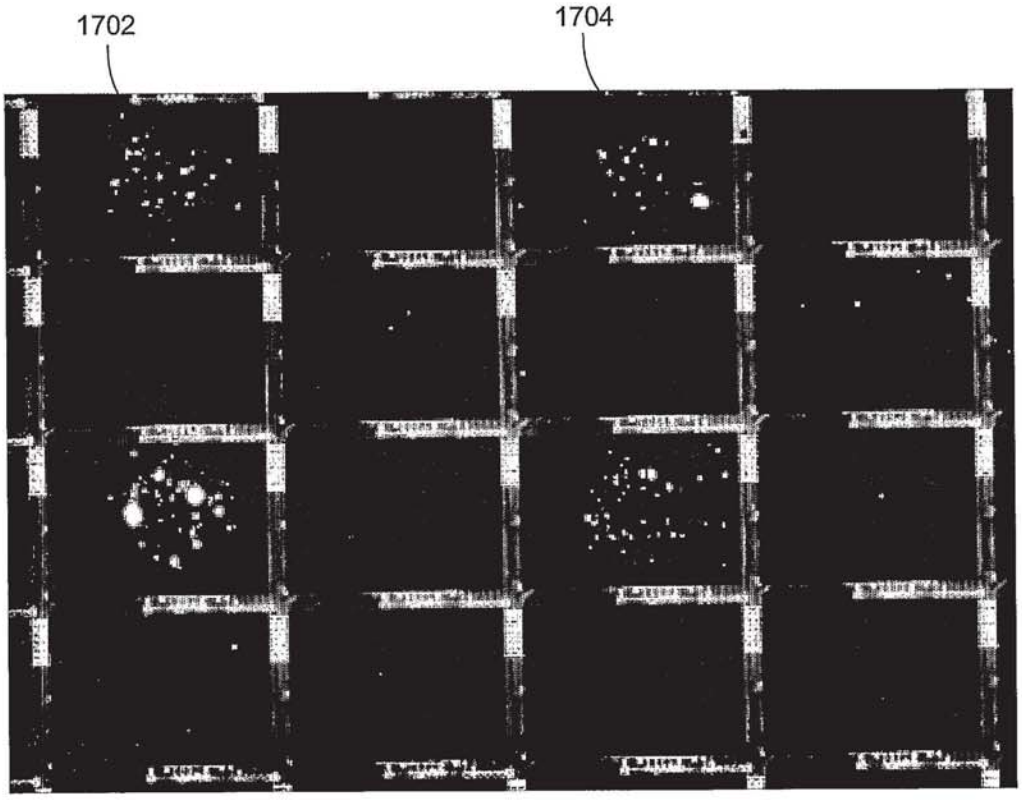


FIG. 17

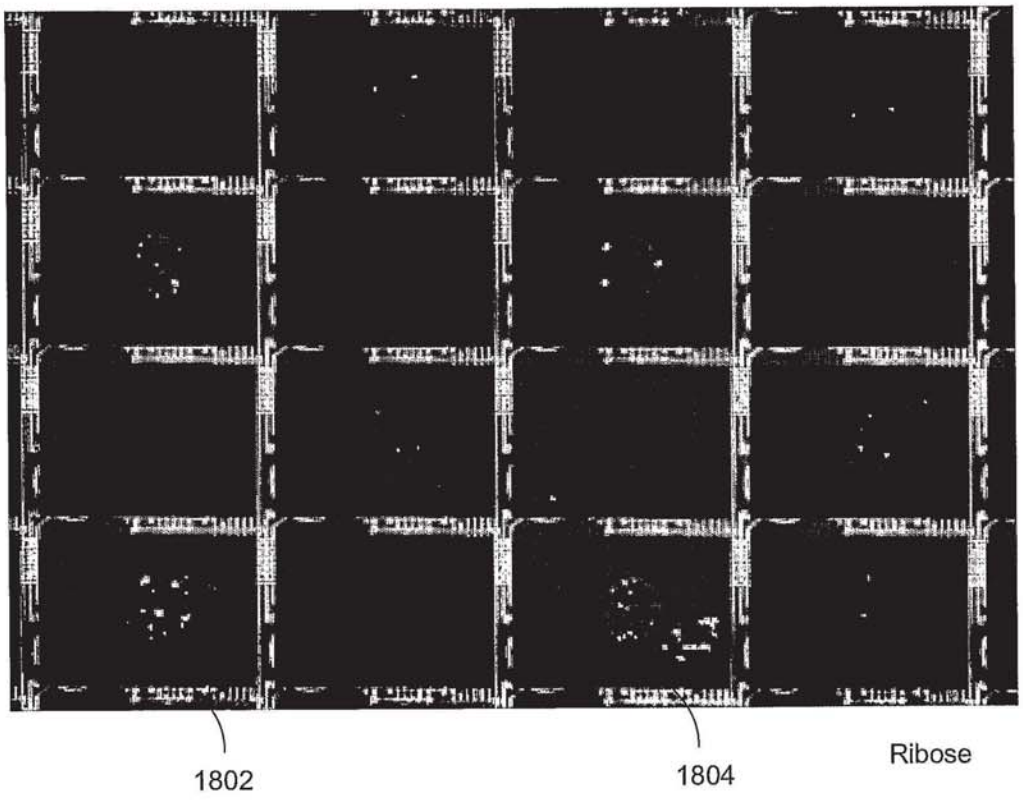


FIG. 18

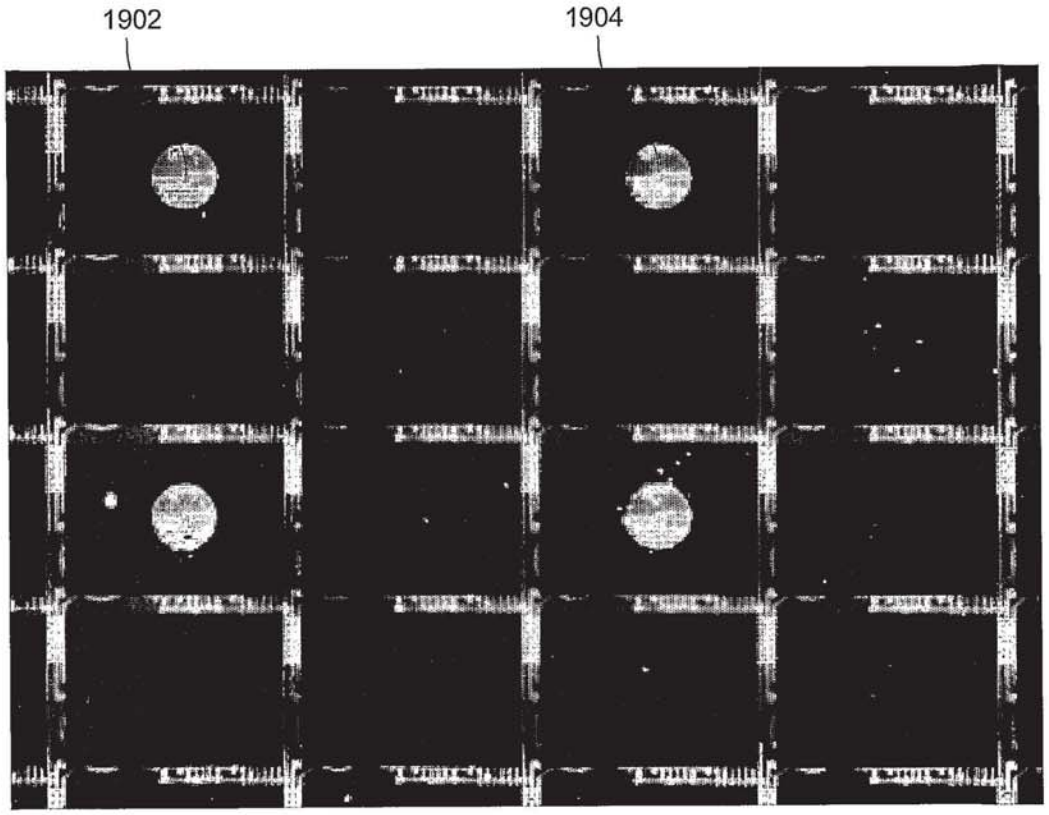


FIG. 19

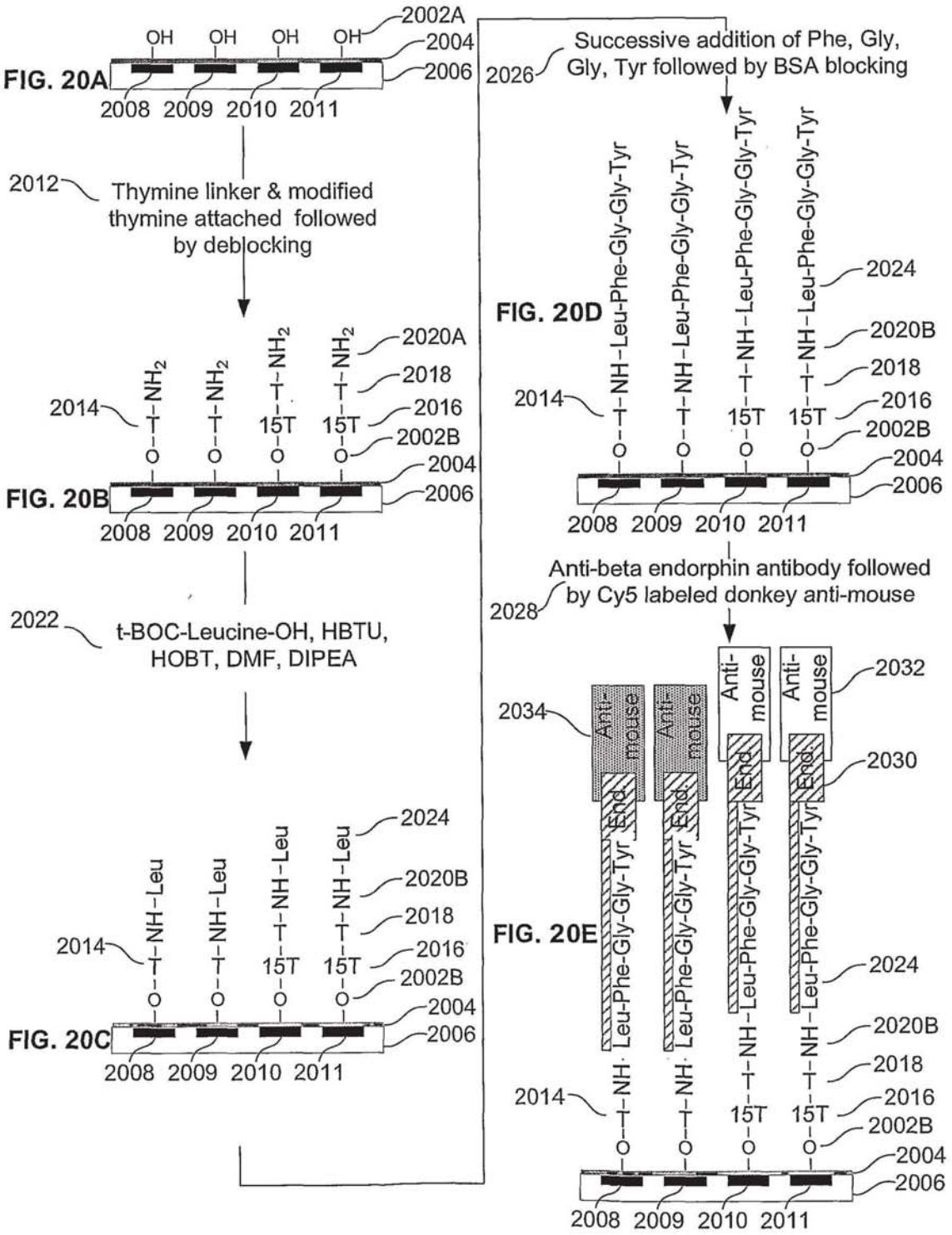


FIG. 20A
OH OH OH OH
2002A
2004
2006
2008 2009 2010 2011
2012
Thymine linker & modified thymine attached followed by deblocking
FIG. 20B
2014
NH2
15T
2020A
2018
2016
2002B
2004
2006
2008 2009 2010 2011
2022
t-BOC-Leucine-OH, HBTU, HOBT, DMF, DIPEA
FIG. 20C
NH-Leu
2024
2020B
2018
2016
2002B
2004
2006
2008 2009 2010 2011
2026
Successive addition of Phe, Gly, Gly, Tyr followed by BSA blocking
FIG. 20D
NH-Leu-Phe-Gly-Gly-Tyr
2024
2020B
2018
2016
2002B
2004
2006
2008 2009 2010 2011
2028
Anti-beta endorphin antibody followed by Cy5 labeled donkey anti-mouse
FIG. 20E
2034
Anti-mouse
End.
Leu-Phe-Gly-Gly-Tyr
2032
2030
2024
2020B
2018
2016
2002B
2004
2006
2008 2009 2010 2011

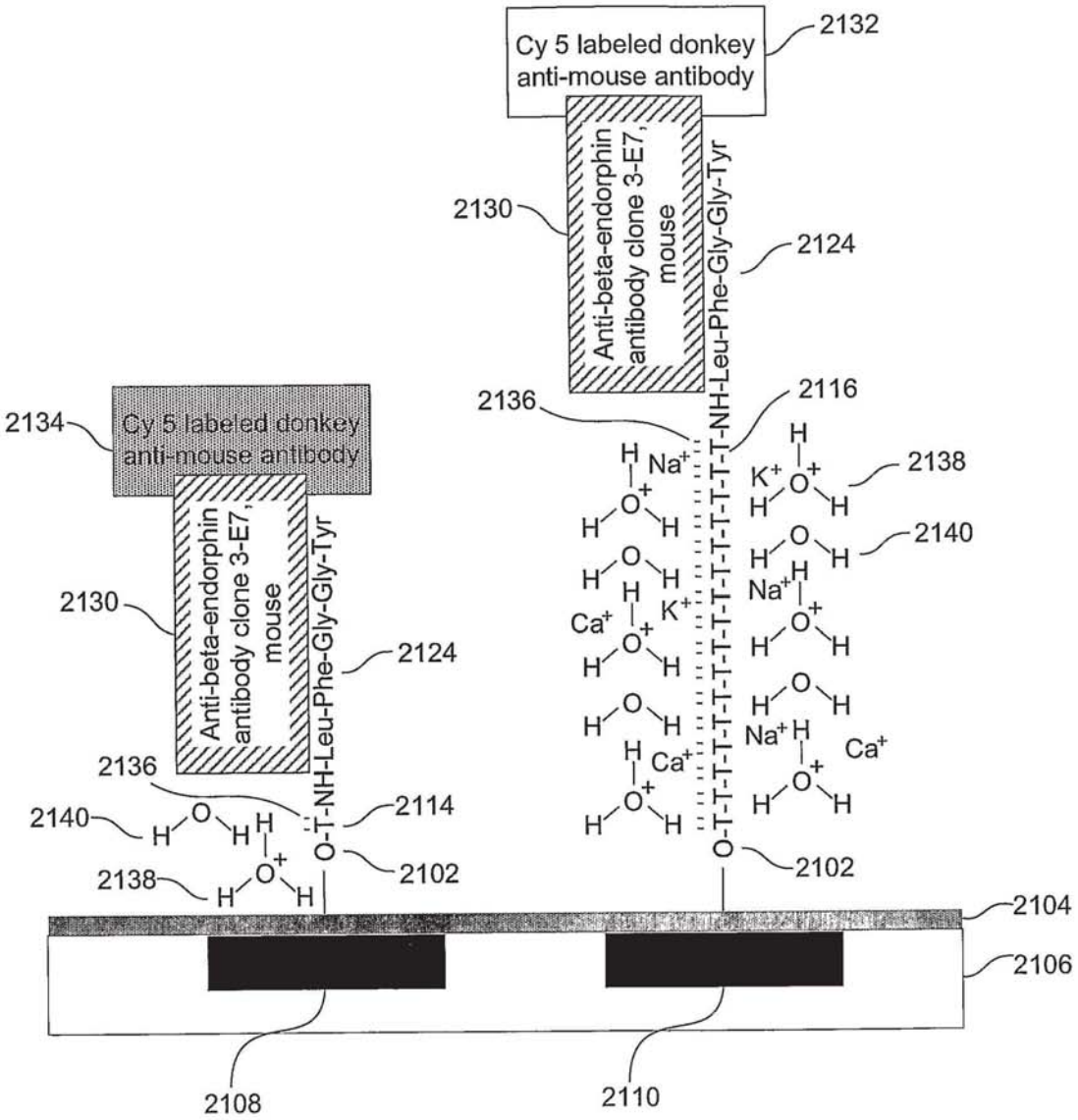

Cy 5 labeled donkey anti-mouse antibody
2132
Anti-beta-endorphin antibody clone 3-E7, mouse
2130
2124
O-T-NH-Leu-Phe-Gly-Gly-Tyr
2136
2116
2138
2140
2134
2114
2102
2104
2106
2108
2110

FIG. 21

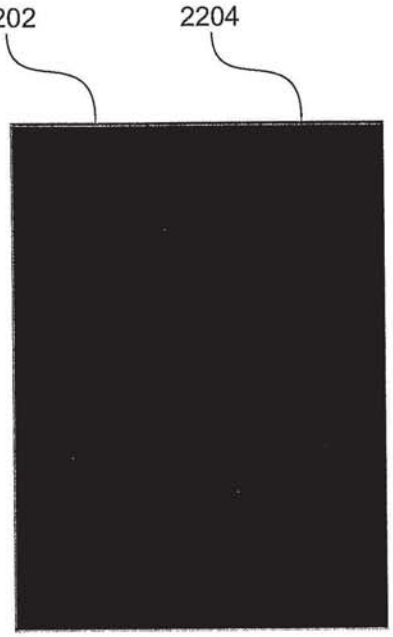


FIG. 22

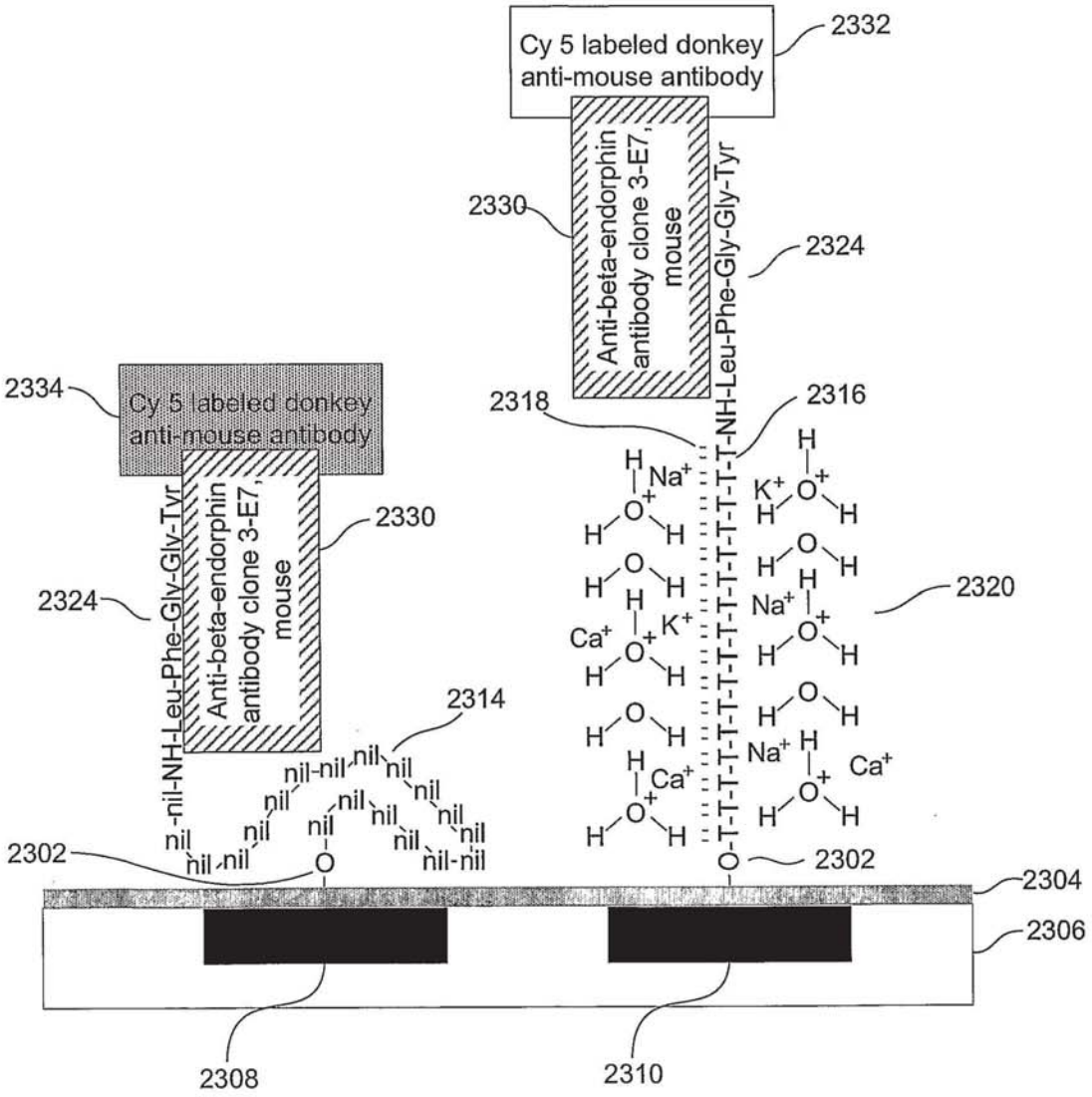

Cy 5 labeled donkey anti-mouse antibody
2332
Anti-beta-endorphin antibody clone 3-E7, mouse
2330
2324
Cy 5 labeled donkey anti-mouse antibody
2334
Anti-beta-endorphin antibody clone 3-E7, mouse
2330
2324
2318
2316
2320
2314
2302
2302
2304
2306
2308
2310

FIG. 23

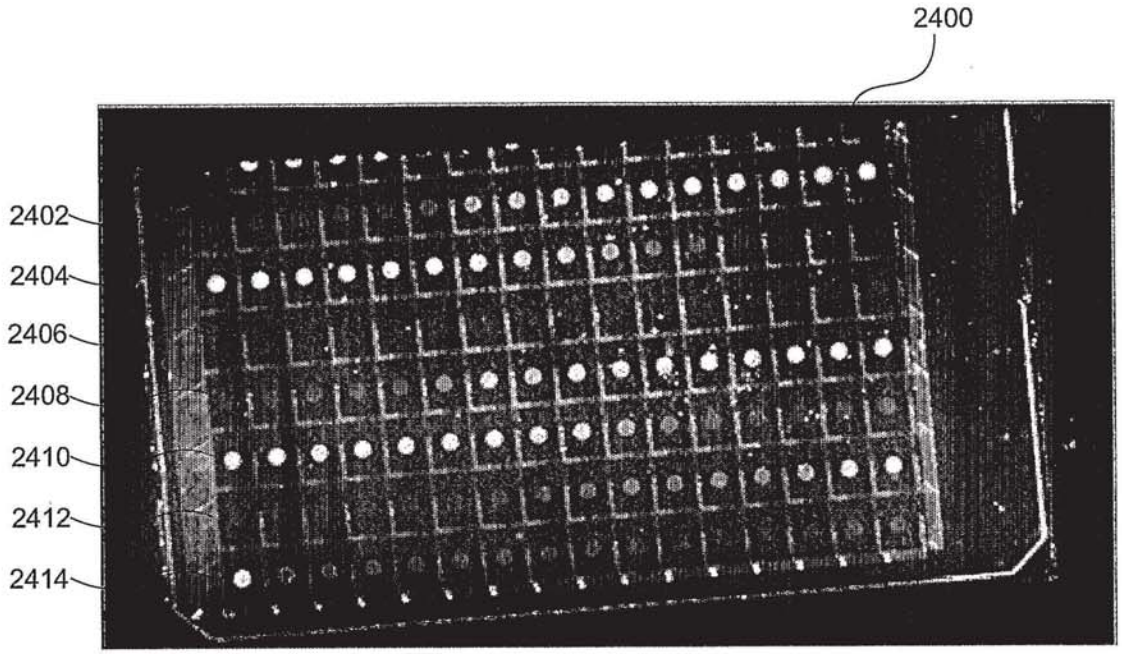
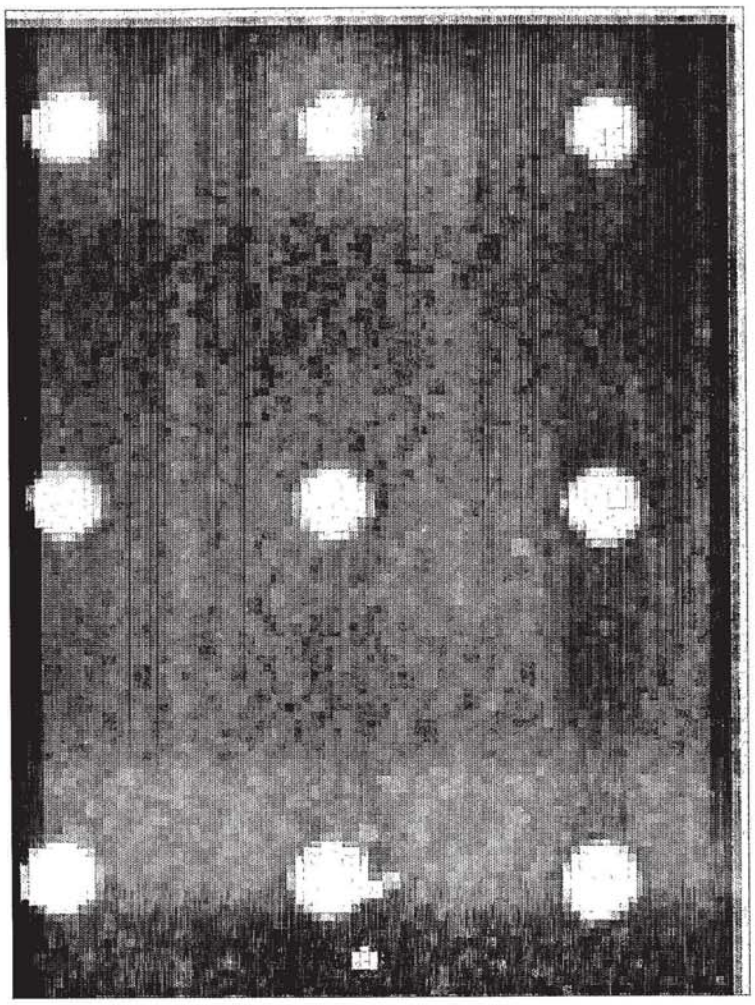


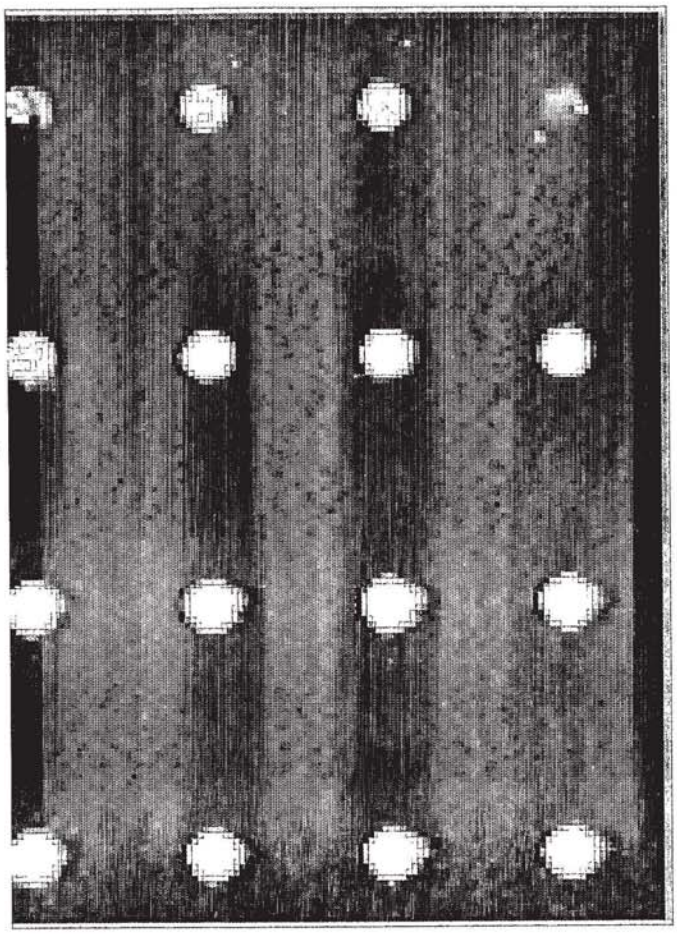
FIG. 24



Adsorbed Porous Reaction Layer:
1-(3-hydroxypropyl) pyrrole

DNA hybridization having fluorescent tag

FIG. 25



Adsorbed Porous Reaction Layer:
1-hexylpyrrole

DNA hybridization having fluorescent tag

FIG. 26

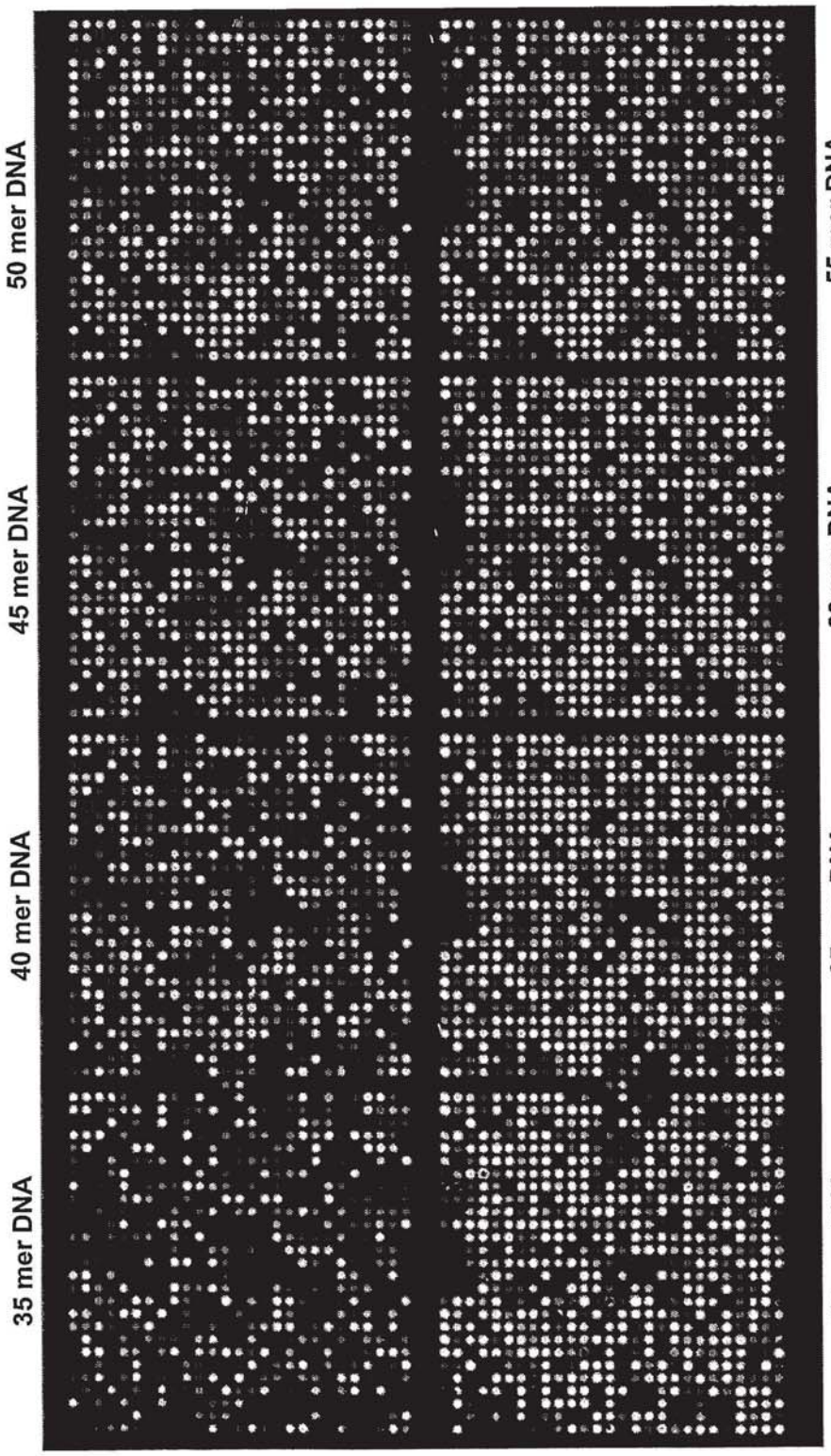
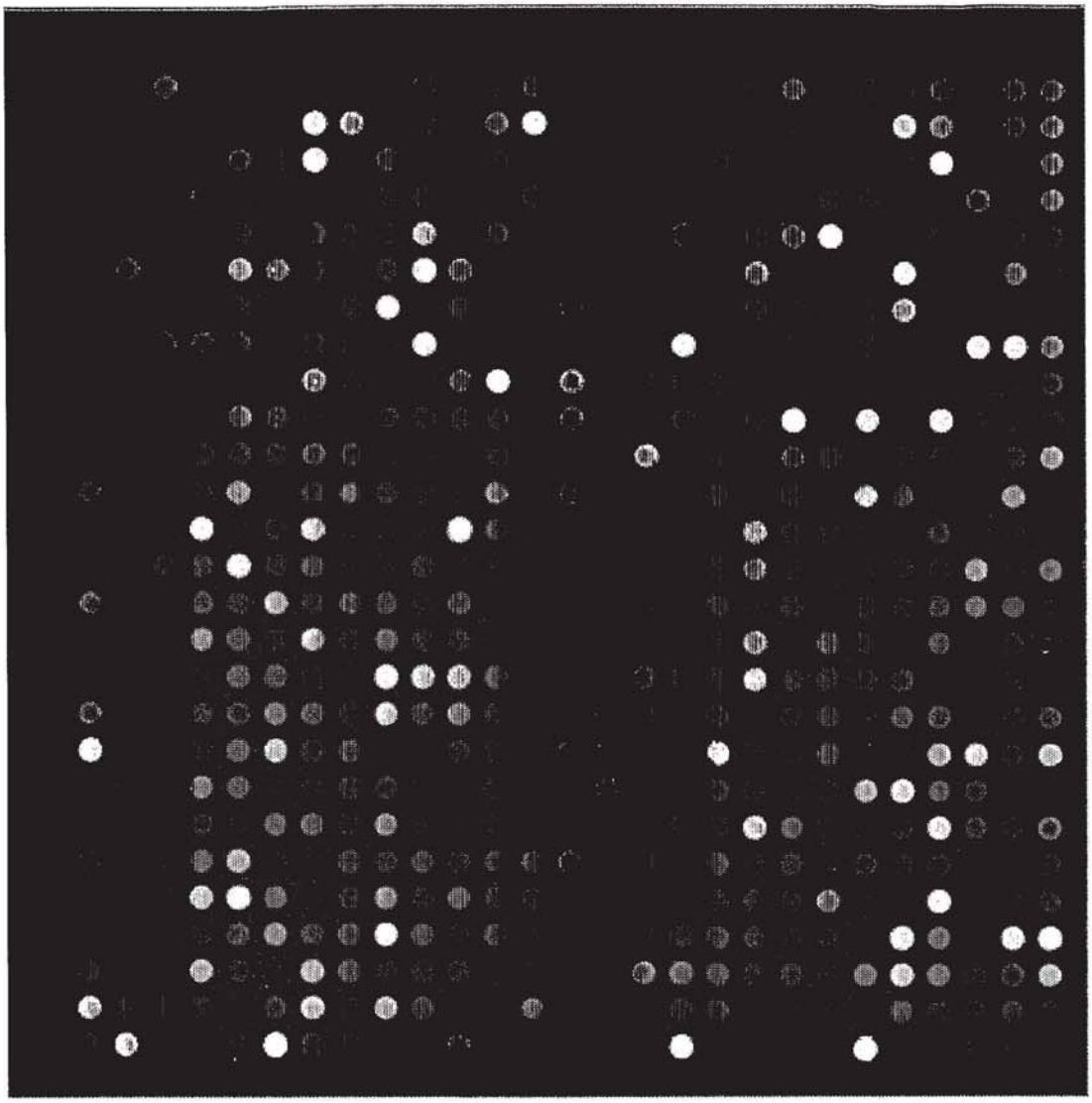

35 mer DNA
40 mer DNA
45 mer DNA
50 mer DNA
70 mer DNA
65 mer DNA
60 mer DNA
55 mer DNA

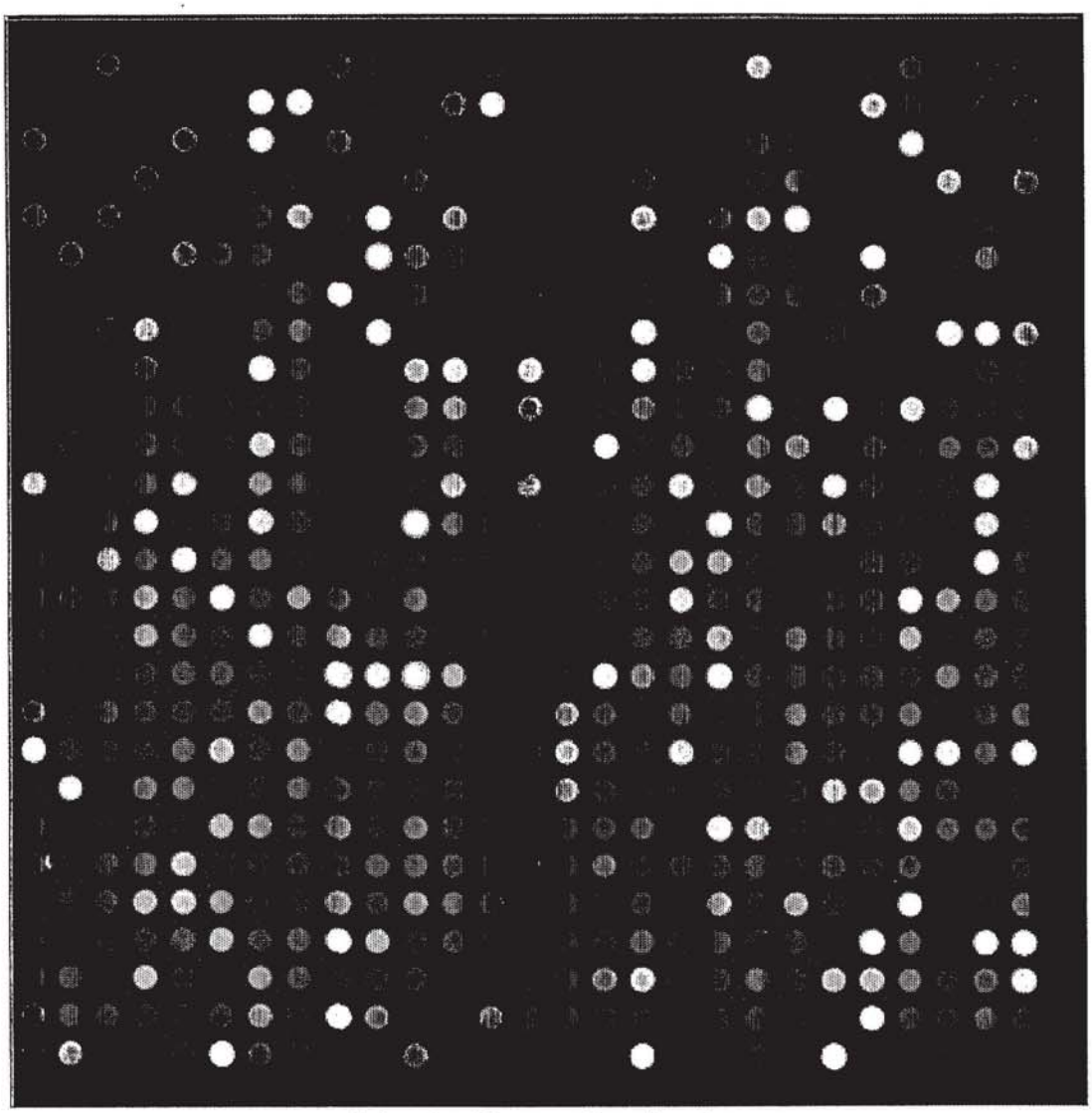
FIG. 27



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
35 mers on the array

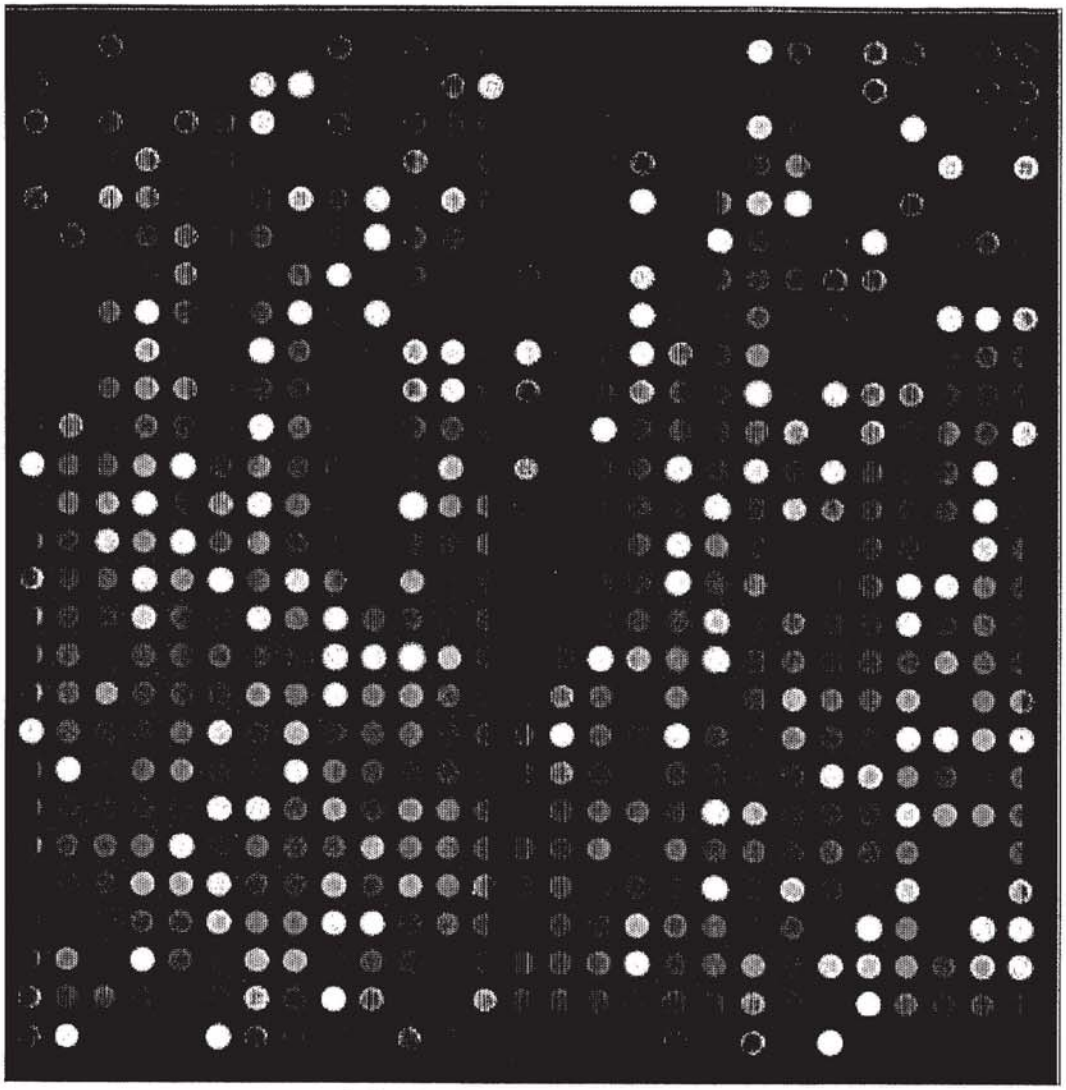
FIG. 28



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
40 mers on the array

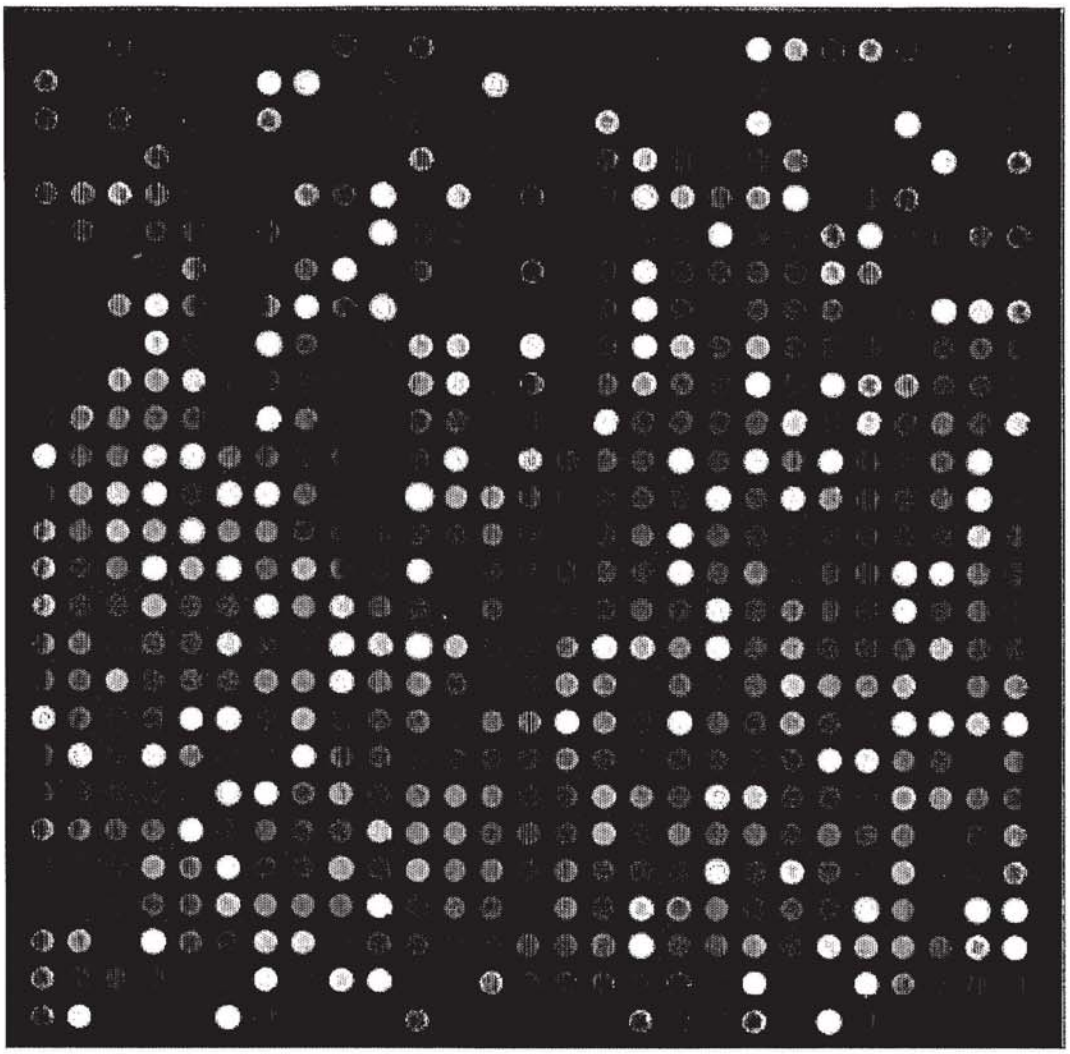
FIG. 29



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
45 mers on the array

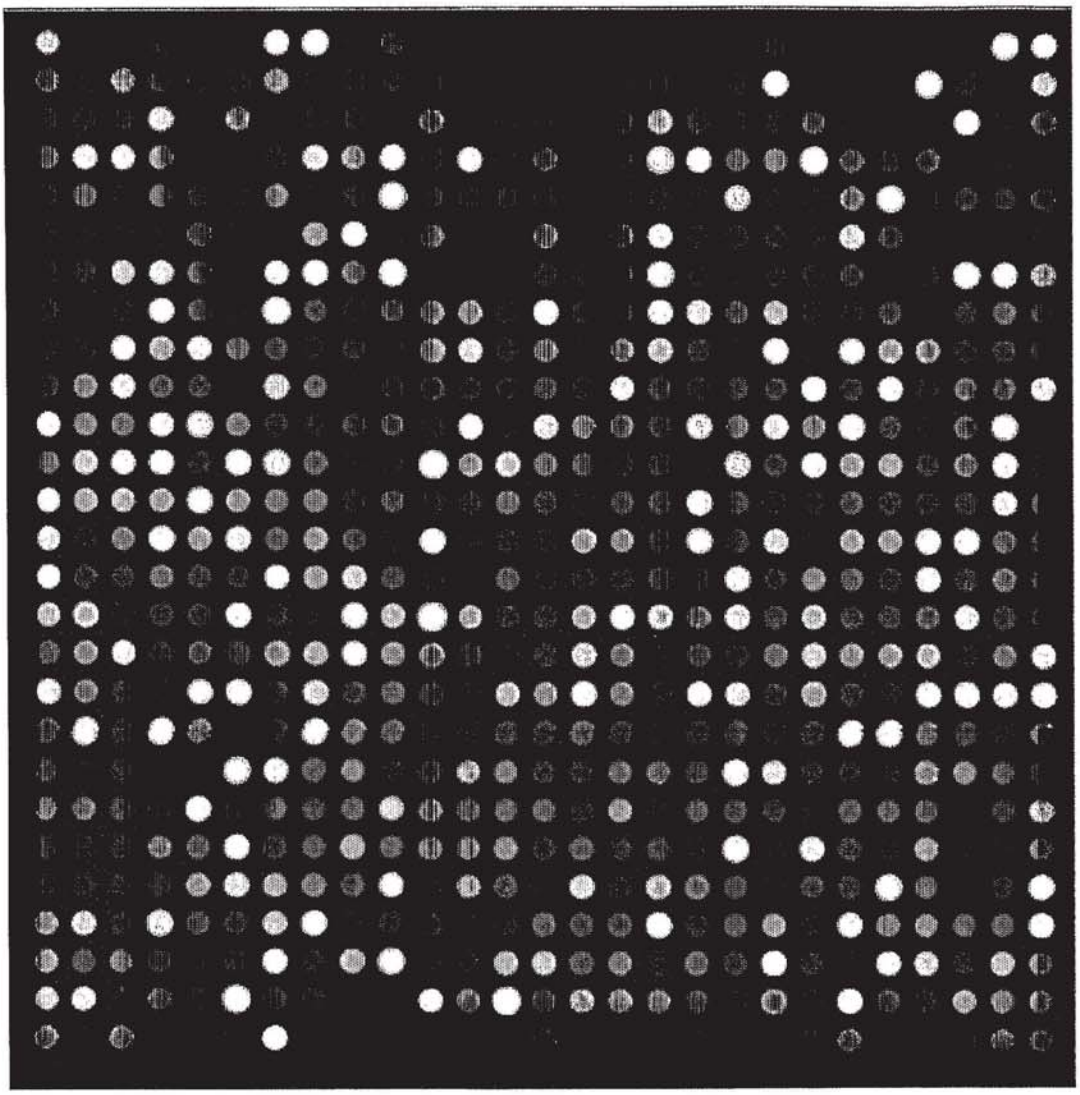
FIG. 30



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
50 mers on the array

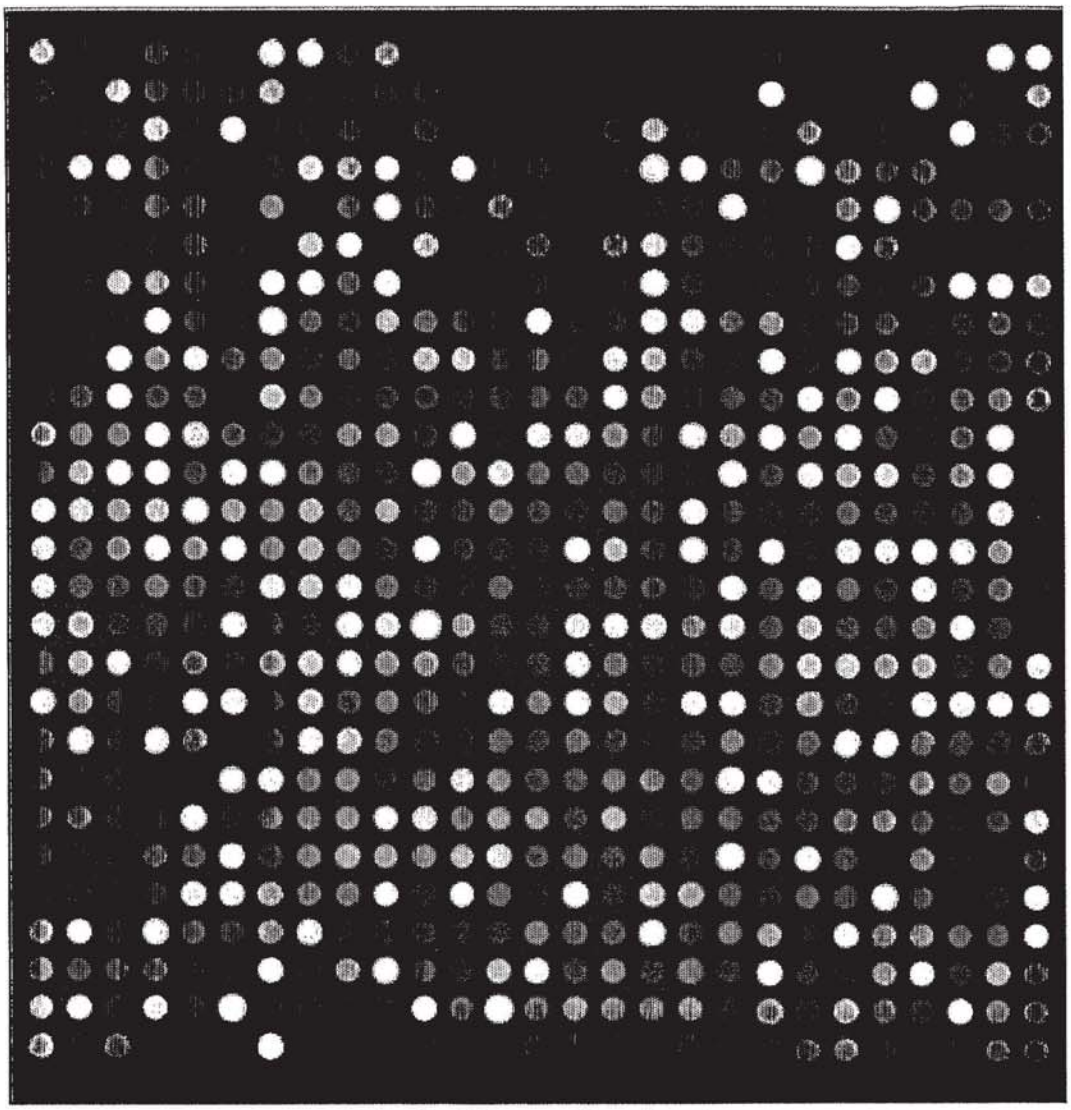
FIG. 31



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
55 mers on the array

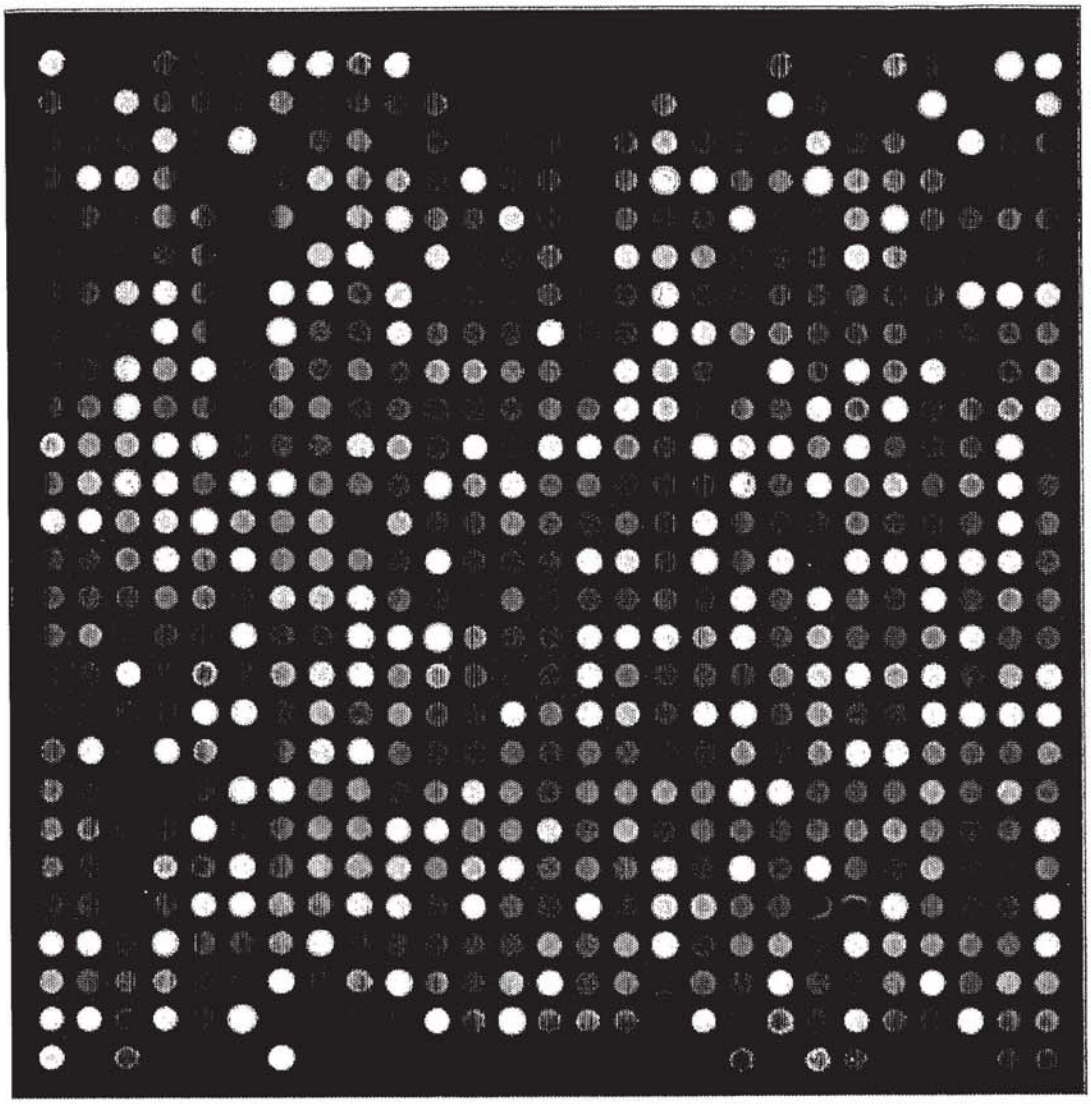
FIG. 32



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
60 mers on the array

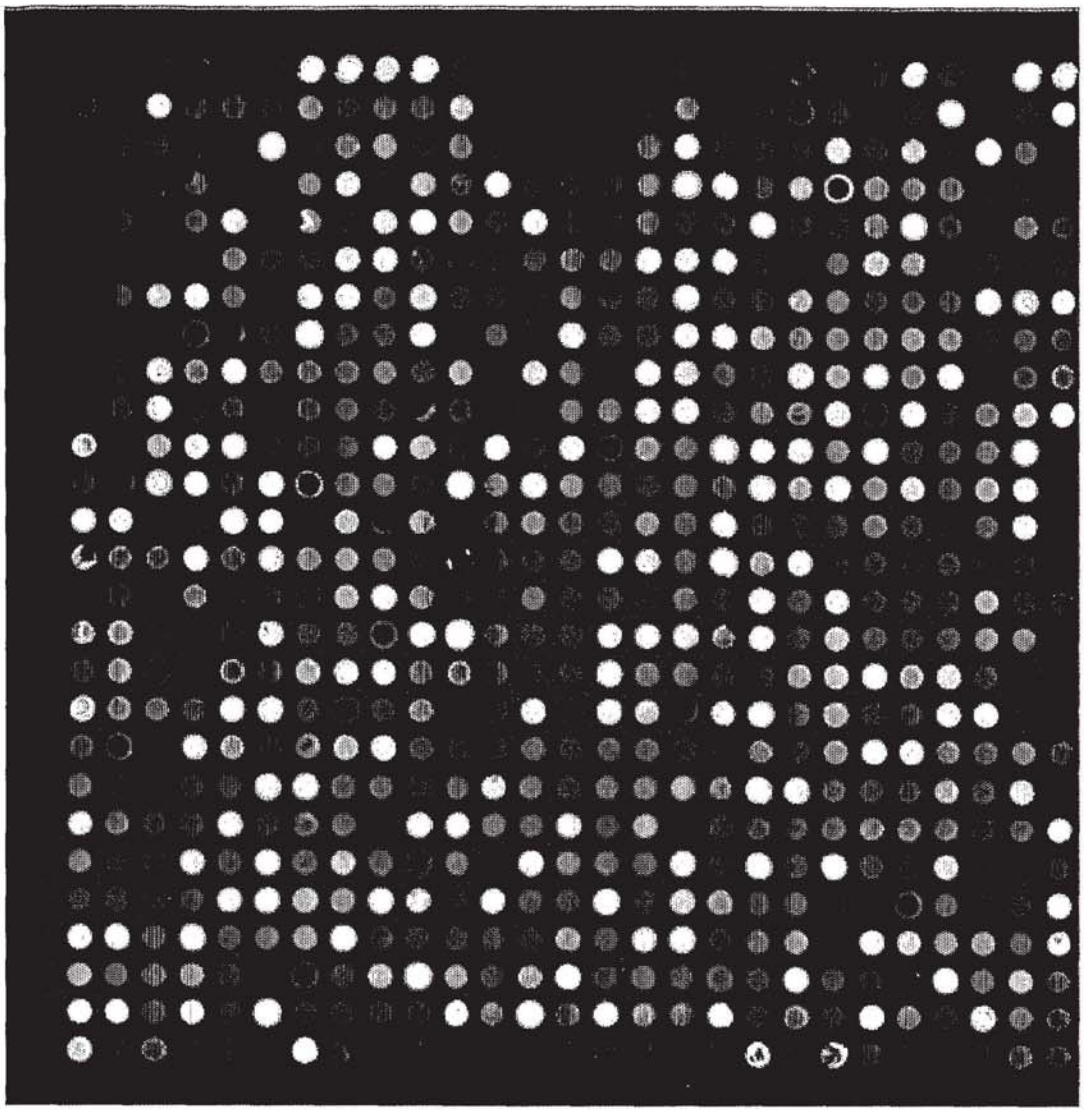
FIG. 33



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
65 mers on the array

FIG. 34



Adsorbed Porous Reaction Layer:
sucrose, fructose, and glucose blend

9-mer DNA hybridization having fluorescent tag
70 mers on the array

FIG. 35