Figure 1

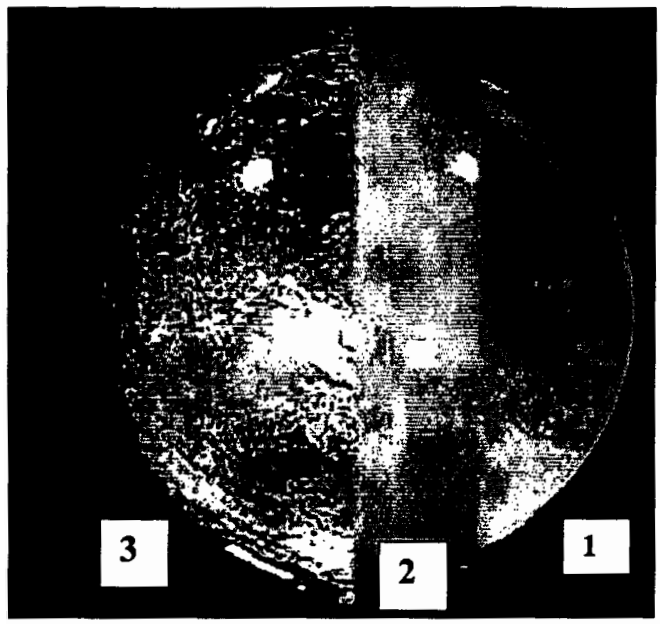


Figure 2

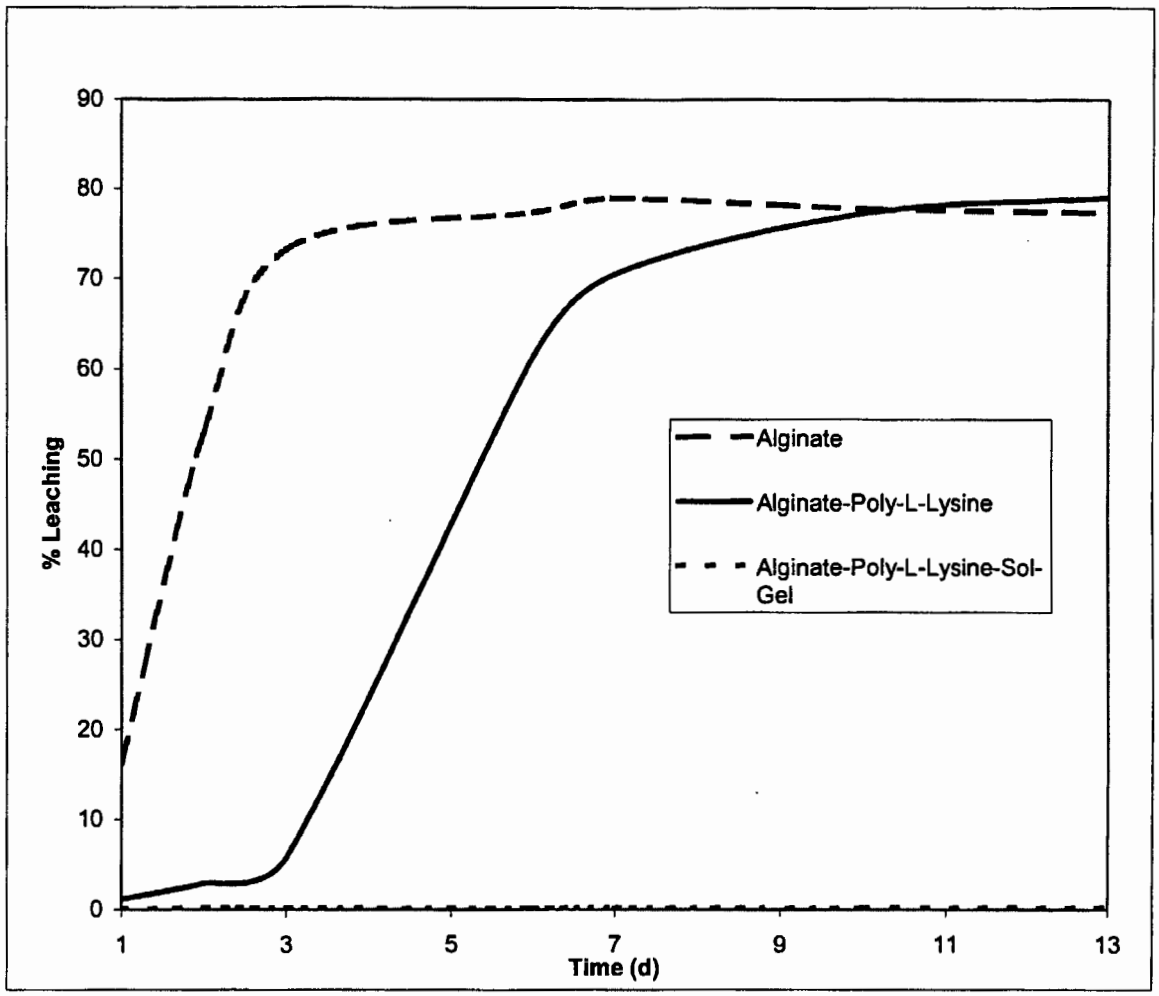

90
80
70
60
50
40
30
20
10
0
% Leaching
1
3
5
7
9
11
13
Time (d)
Alginate
Alginate-Poly-L-Lysine
Alginate-Poly-L-Lysine-Sol-Gel

Figure 3

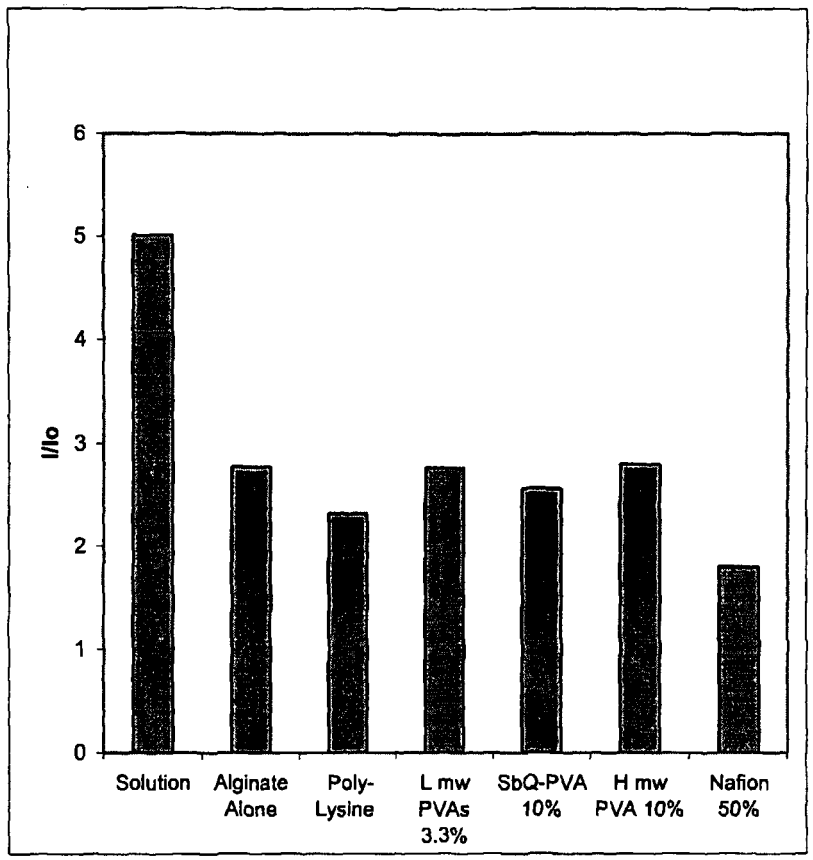

I/Io
0
1
2
3
4
5
6
Solution
Alginate Alone
Poly-Lysine
L mw PVAs 3.3%
SbQ-PVA 10%
H mw PVA 10%
Nafion 50%

Figure 4

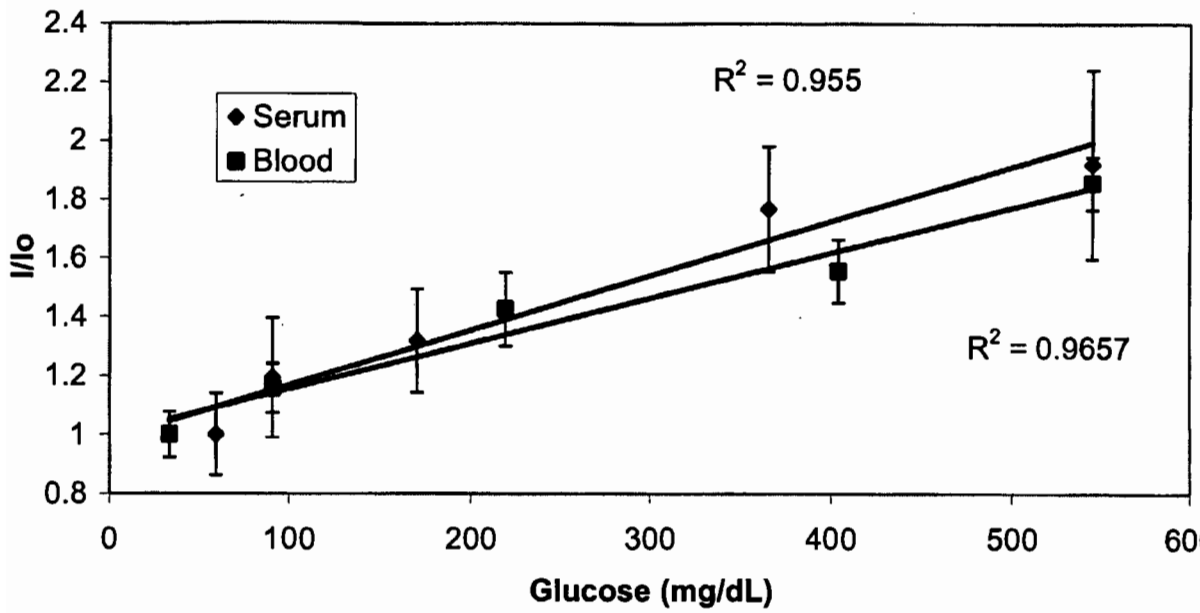

2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
I/Io
0
100
200
300
400
500
600
Glucose (mg/dL)
Serum
Blood
R2 = 0.955
R2 = 0.9657

Figure 5

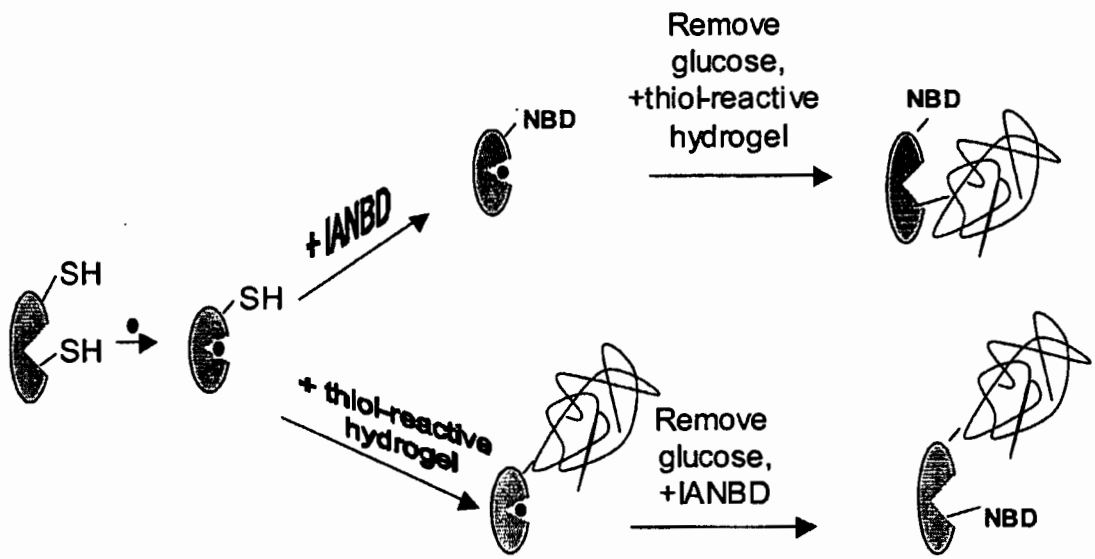
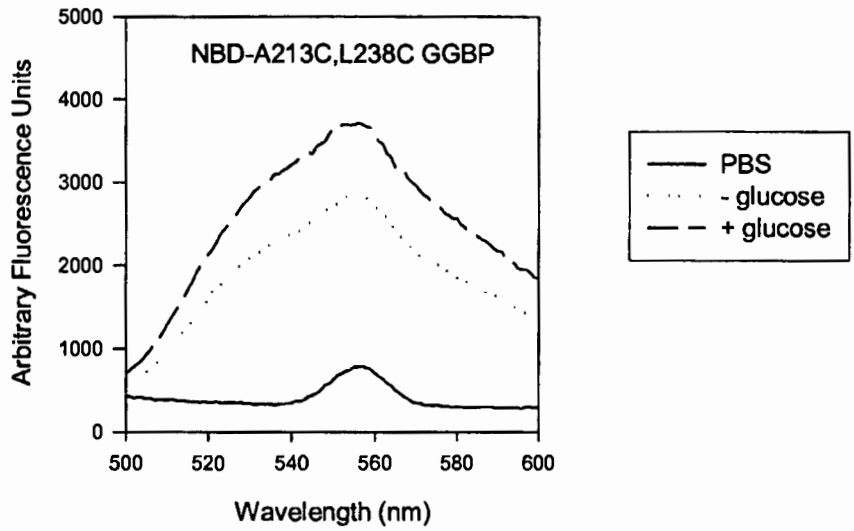

SH
SH
SH
+IANBD
NBD
Remove glucose, +thiol-reactive hydrogel
NBD
+ thiol-reactive hydrogel
Remove glucose, +IANBD
NBD

Figure 6


NBD-A213C,L238C GGBP
Arbitrary Fluorescence Units
5000
4000
3000
2000
1000
0
500
520
540
560
580
600
Wavelength (nm)
PBS
- glucose
+ glucose

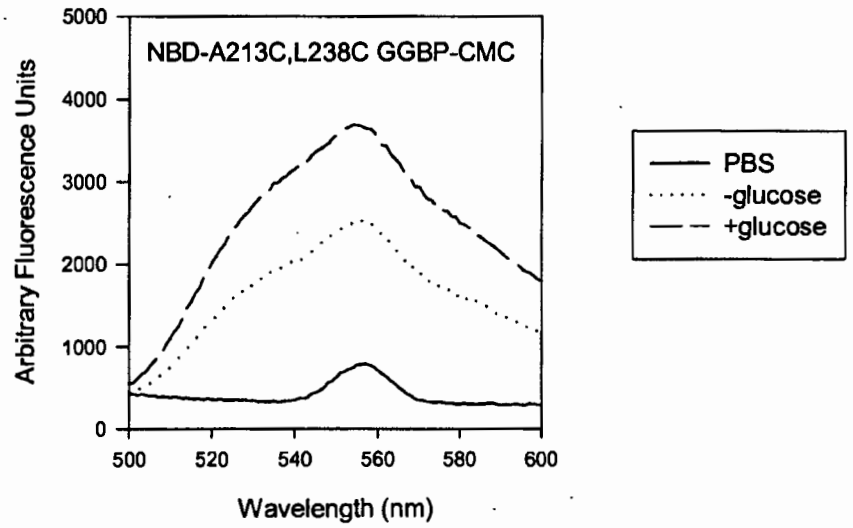
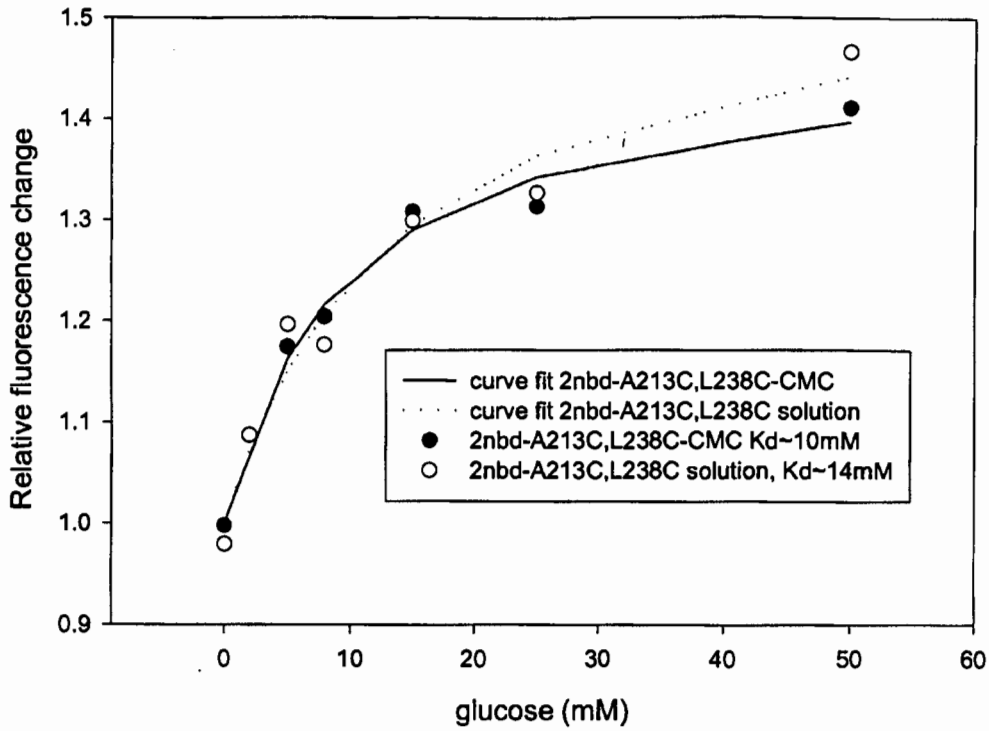

NBD-A213C,L238C GGBP-CMC
Arbitrary Fluorescence Units
5000
4000
3000
2000
1000
0
500
520
540
560
580
600
Wavelength (nm)
PBS
-glucose
+glucose

Figure 7


Relative fluorescence change
glucose (mM)
curve fit 2nbd-A213C,L238C-CMC
curve fit 2nbd-A213C,L238C solution
2nbd-A213C,L238C-CMC Kd~10mM
2nbd-A213C,L238C solution, Kd~14mM
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0
10
20
30
40
50
60