FIG. 1A.

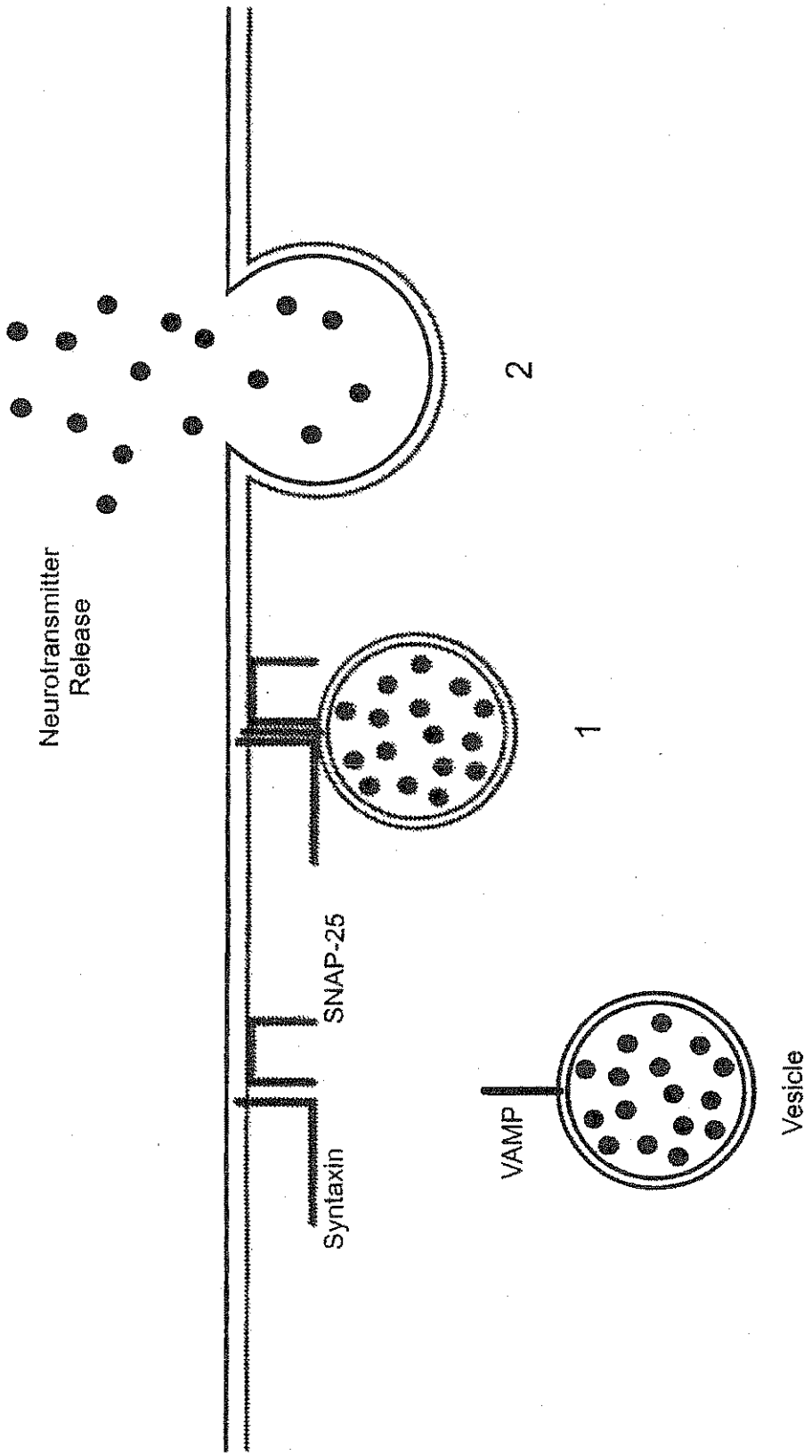

Neurotransmitter Release
2
1
SNAP-25
Syntaxin
VAMP
Vesicle

FIG. 1B.

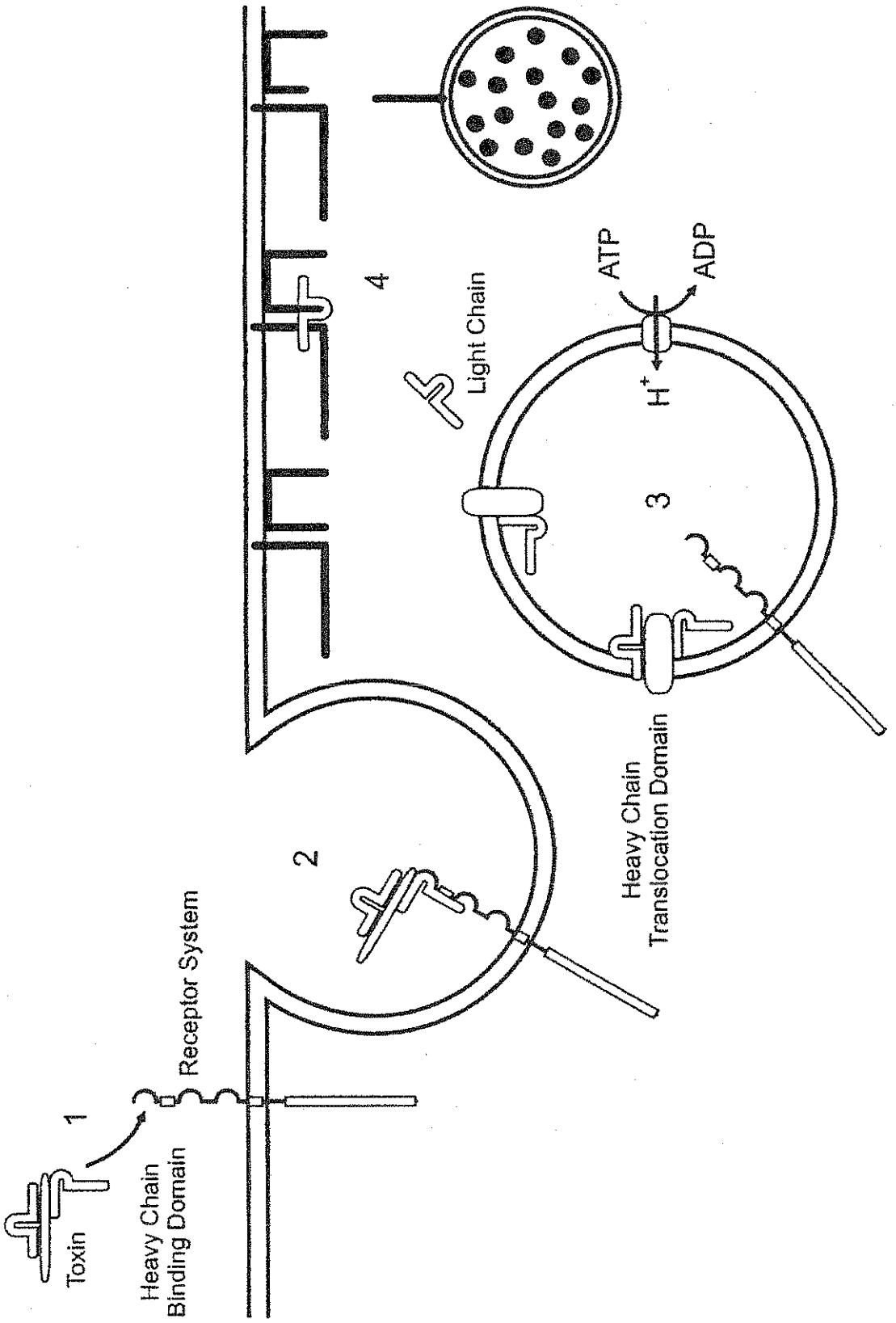
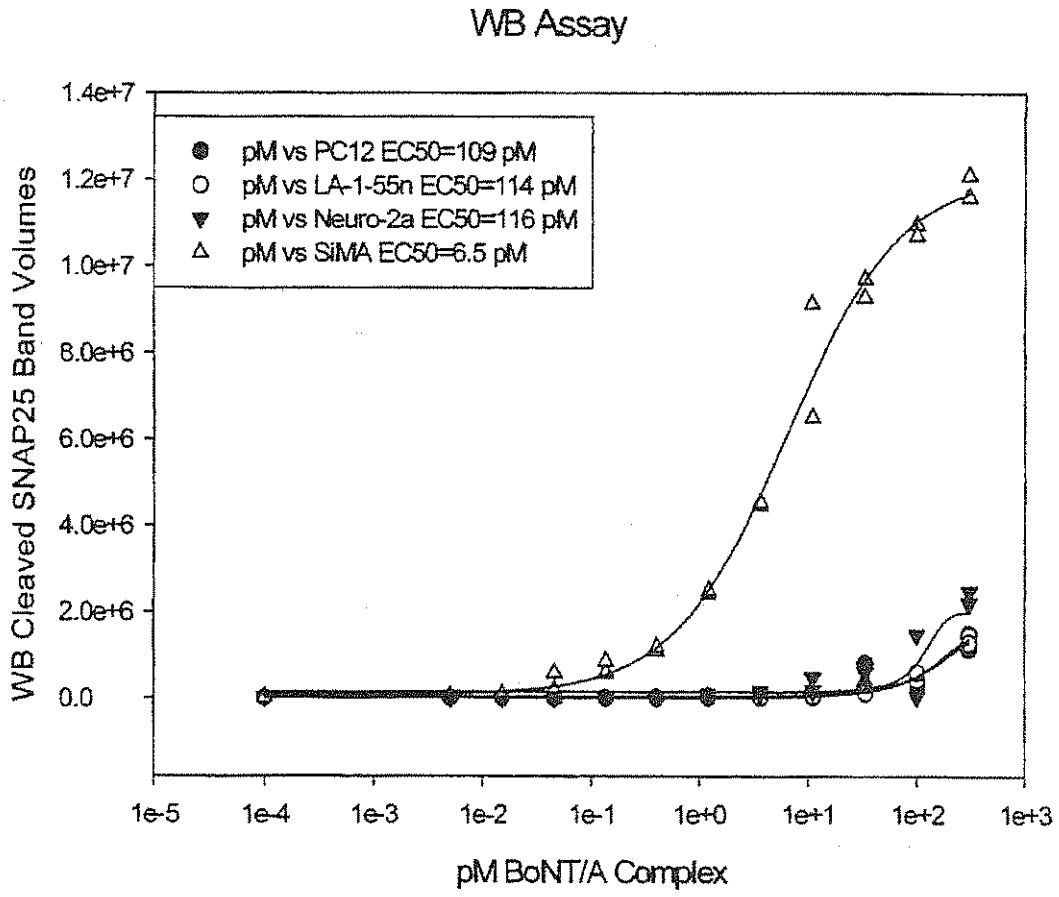

1
Toxin
Heavy Chain
Binding Domain
Receptor System
2
Heavy Chain
Translocation Domain
3
ATP
ADP
H+
4
Light Chain

FIG. 2.

A



B

Signal to Noise Ratio	PC12	LA-1-55n	Neuro-2a	SiMa
300pM/0pM	107	121	184	412
1.2pM/0pM	3	2	8	85

FIG. 3.

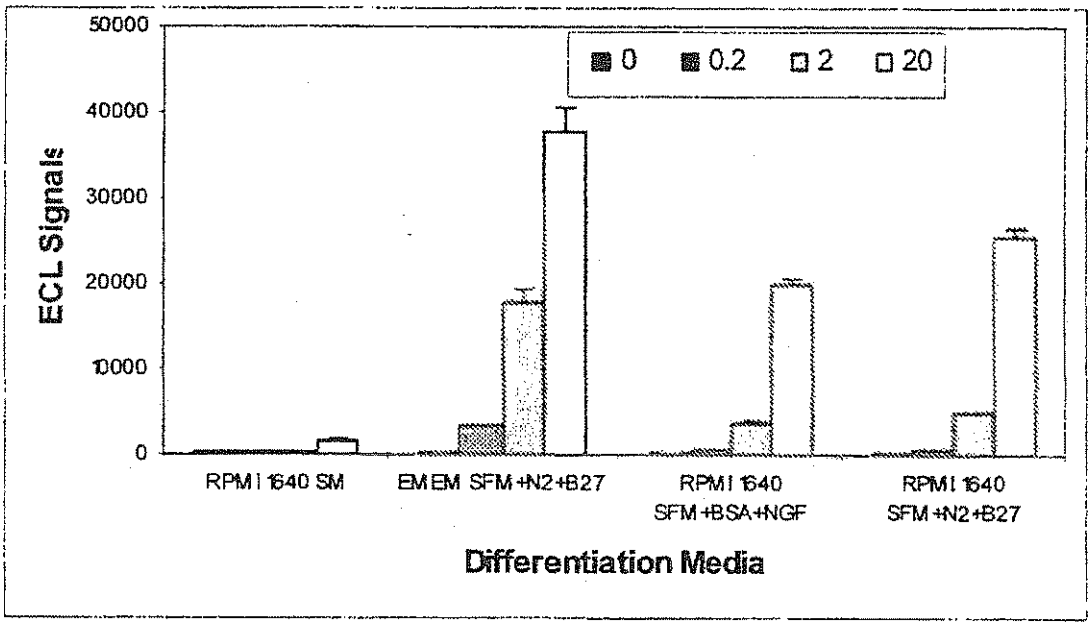

50000
40000
30000
20000
10000
0
ECL Signals
0
0.2
2
20
RPMI 1640 SM
EMEM SFM+N2+B27
RPMI 1640 SFM+BSA+NGF
RPMI 1640 SFM+N2+B27
Differentiation Media

FIG. 4.

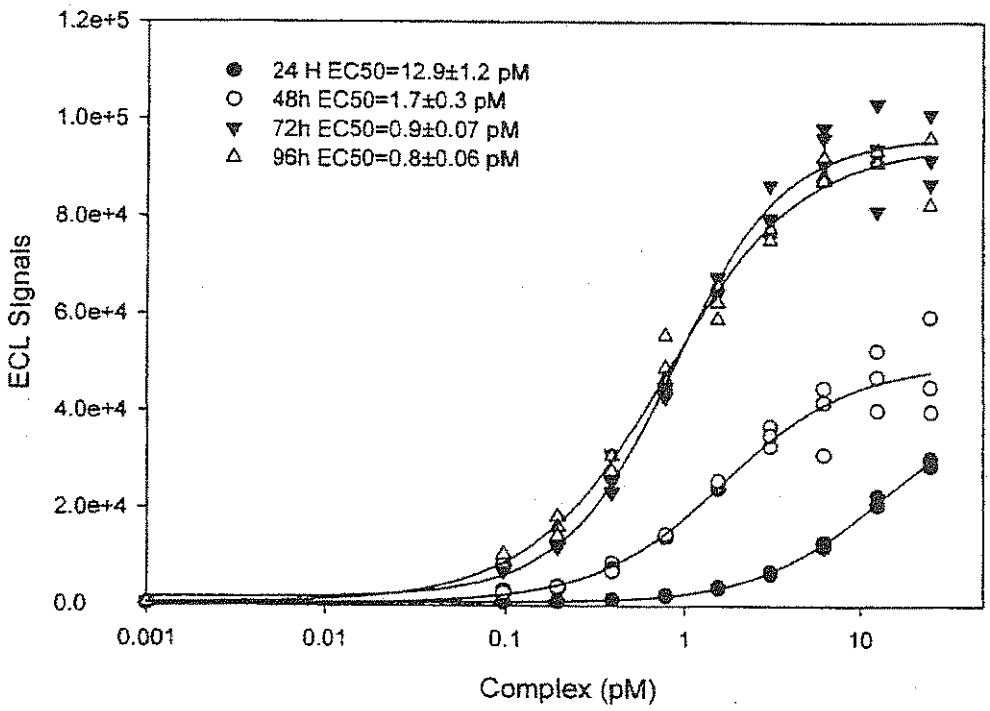

1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
0.0
ECL Signals
24 H EC50=12.9±1.2 pM
48h EC50=1.7±0.3 pM
72h EC50=0.9±0.07 pM
96h EC50=0.8±0.06 pM
0.001
0.01
0.1
1
10
Complex (pM)

FIG. 5.

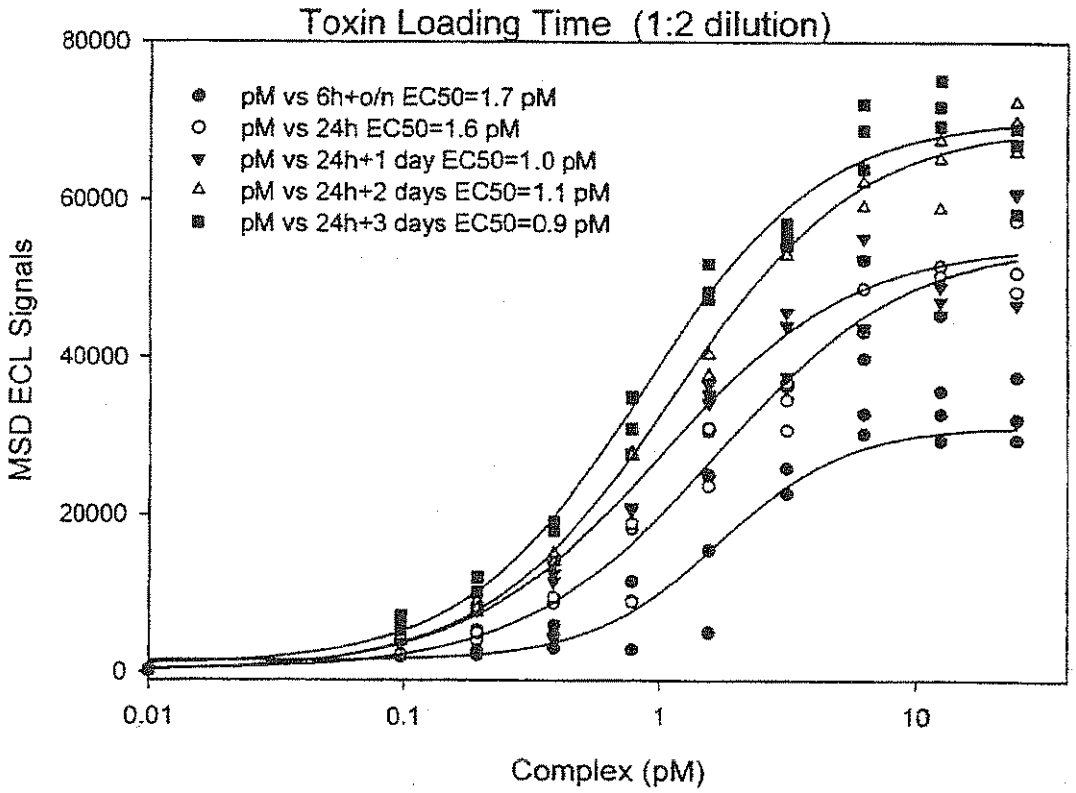

Toxin Loading Time (1:2 dilution)
pM vs 6h+o/n EC50=1.7 pM
pM vs 24h EC50=1.6 pM
pM vs 24h+1 day EC50=1.0 pM
pM vs 24h+2 days EC50=1.1 pM
pM vs 24h+3 days EC50=0.9 pM
MSD ECL Signals
80000
60000
40000
20000
0
0.01
0.1
1
10
Complex (pM)

FIG. 6.

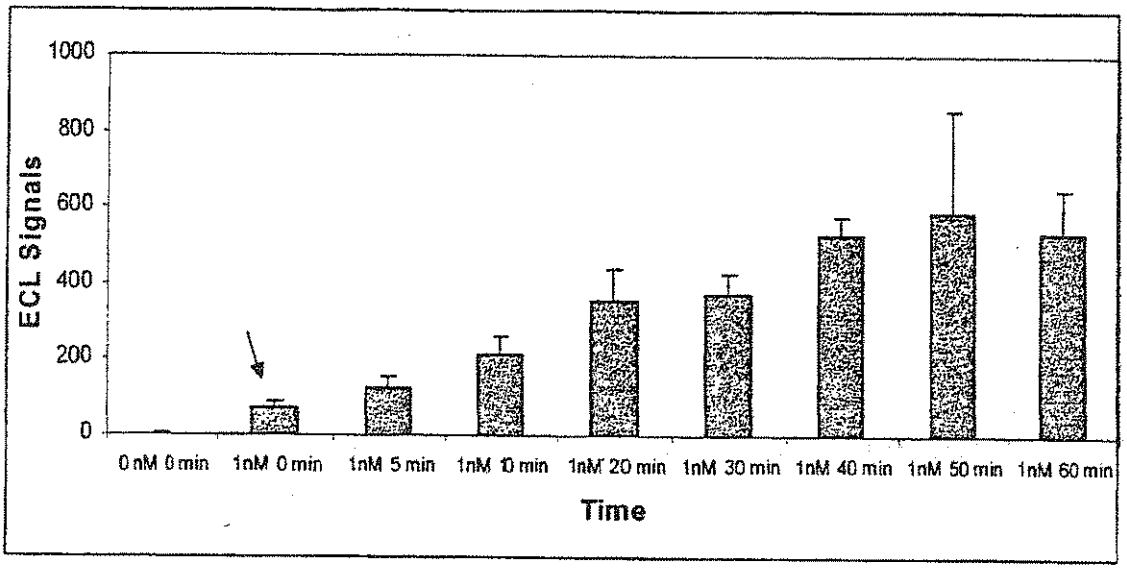

1000
800
600
400
200
0
ECL Signals
0 nM 0 min
1nM 0 min
1nM 5 min
1nM 10 min
1nM 20 min
1nM 30 min
1nM 40 min
1nM 50 min
1nM 60 min
Time

FIG. 7.

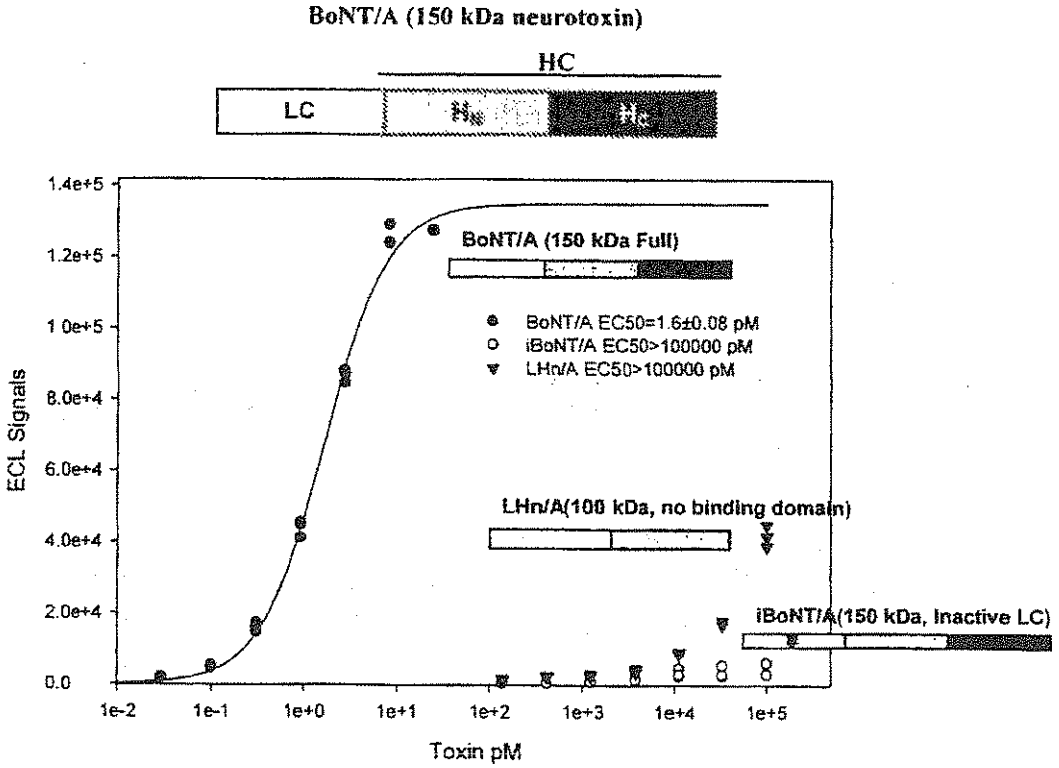

BoNT/A (150 kDa neurotoxin)
HC
LC
BoNT/A (150 kDa Full)
BoNT/A EC50=1.6±0.08 pM
iBoNT/A EC50>100000 pM
LHn/A EC50>100000 pM
LHn/A(100 kDa, no binding domain)
iBoNT/A(150 kDa, Inactive LC)
ECL Signals
1.4e+5
1.2e+5
1.0e+5
8.0e+4
6.0e+4
4.0e+4
2.0e+4
0.0
1e-2
1e-1
1e+0
1e+1
1e+2
1e+3
1e+4
1e+5
Toxin pM

FIG. 8.

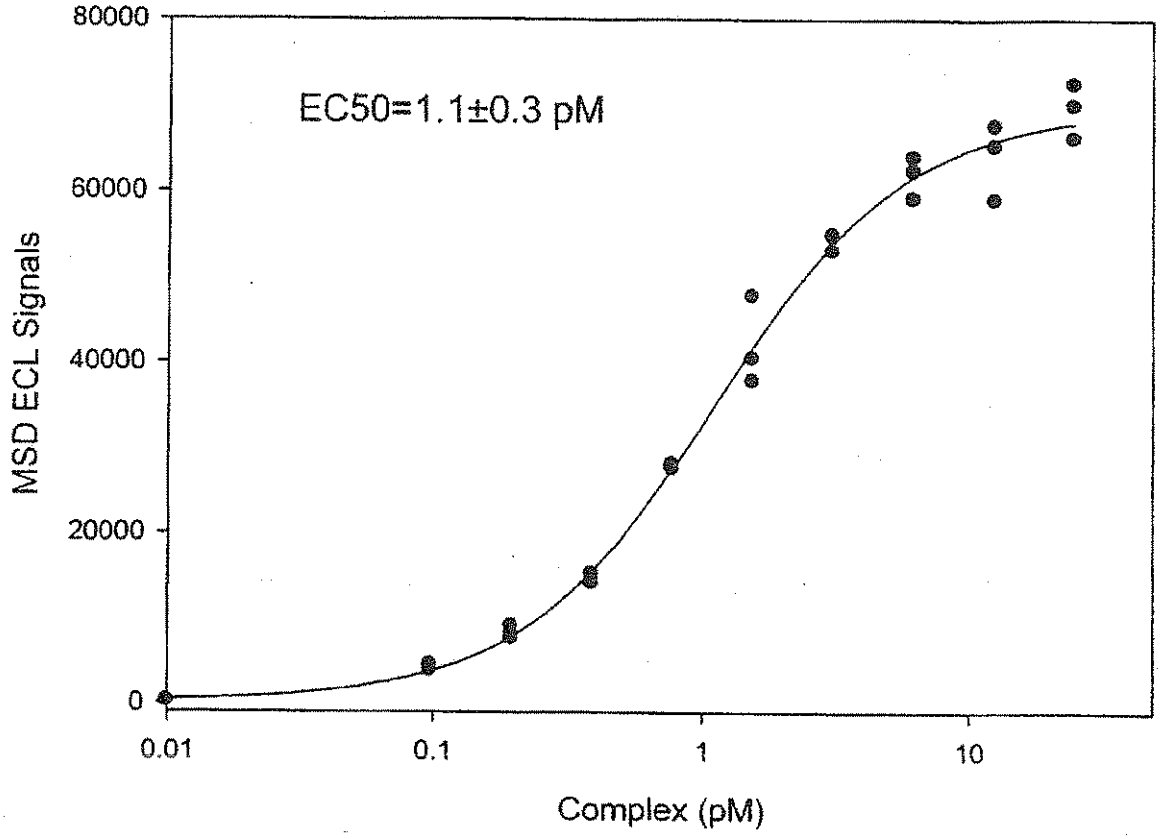

80000
60000
40000
20000
0
MSD ECL Signals
EC50=1.1±0.3 pM
0.01
0.1
1
10
Complex (pM)

FIG.9.

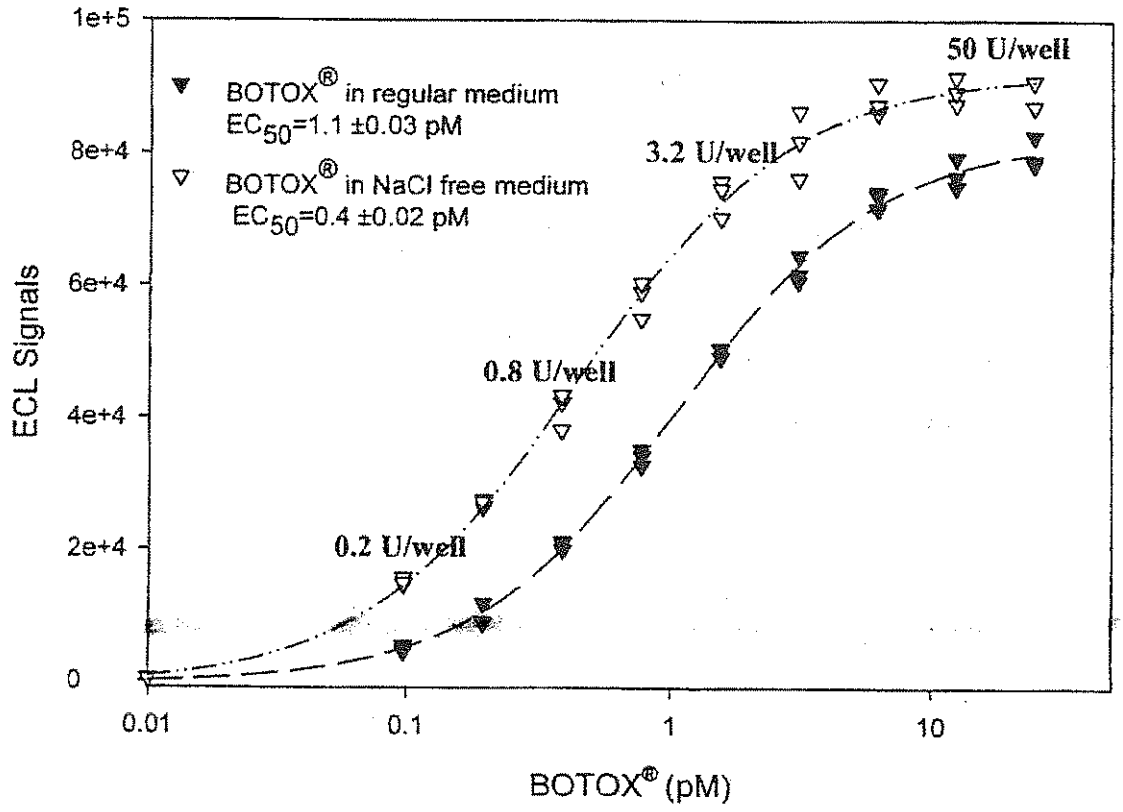
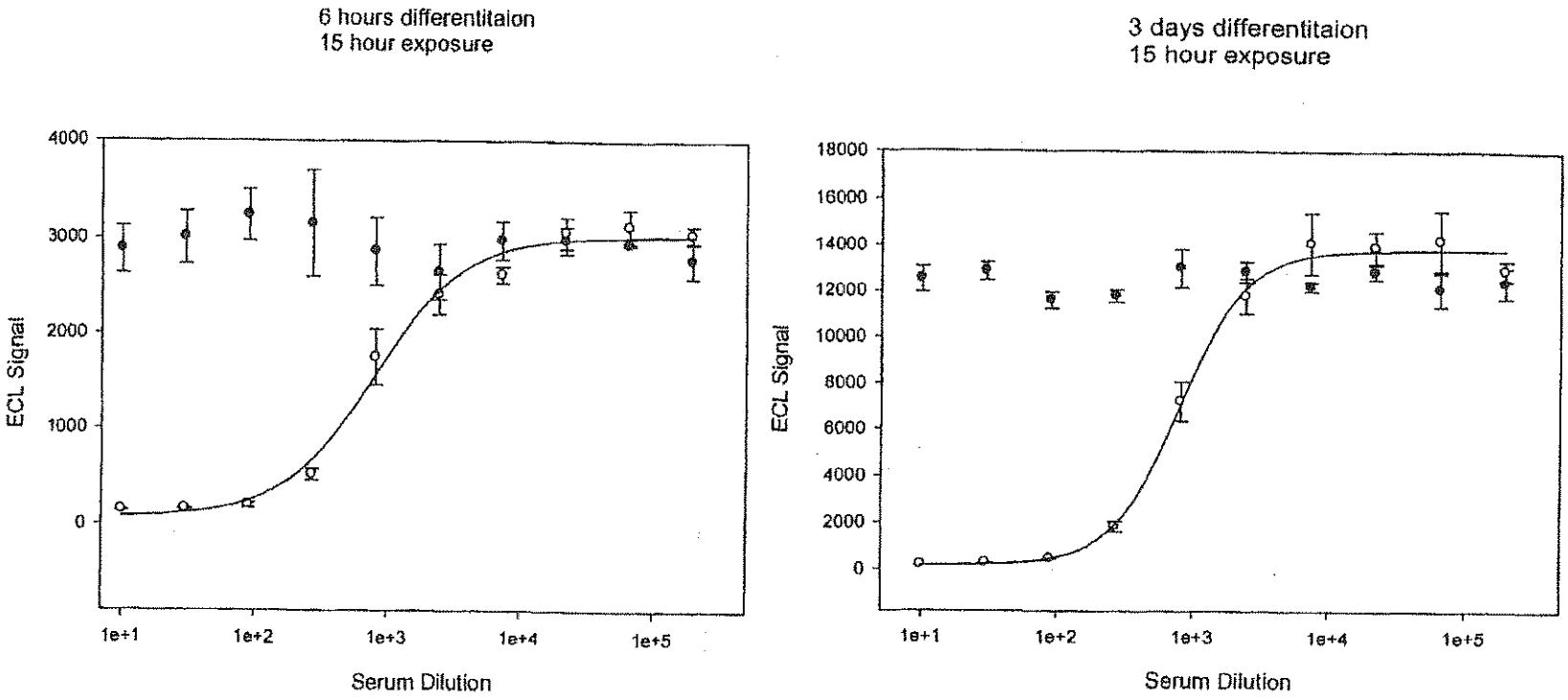

1e+5
8e+4
6e+4
4e+4
2e+4
0
ECL Signals
0.01
0.1
1
10
BOTOX® (pM)
BOTOX® in regular medium
EC50=1.1 ±0.03 pM
BOTOX® in NaCl free medium
EC50=0.4 ±0.02 pM
50 U/well
3.2 U/well
0.8 U/well
0.2 U/well

FIG. 10.



Dilution EC_{50}: 800
$Signal_{Max}$ / $Signal_{Min}$: 80

● Naïve Human Serum

○ Immunized Human Serum