Figure 1

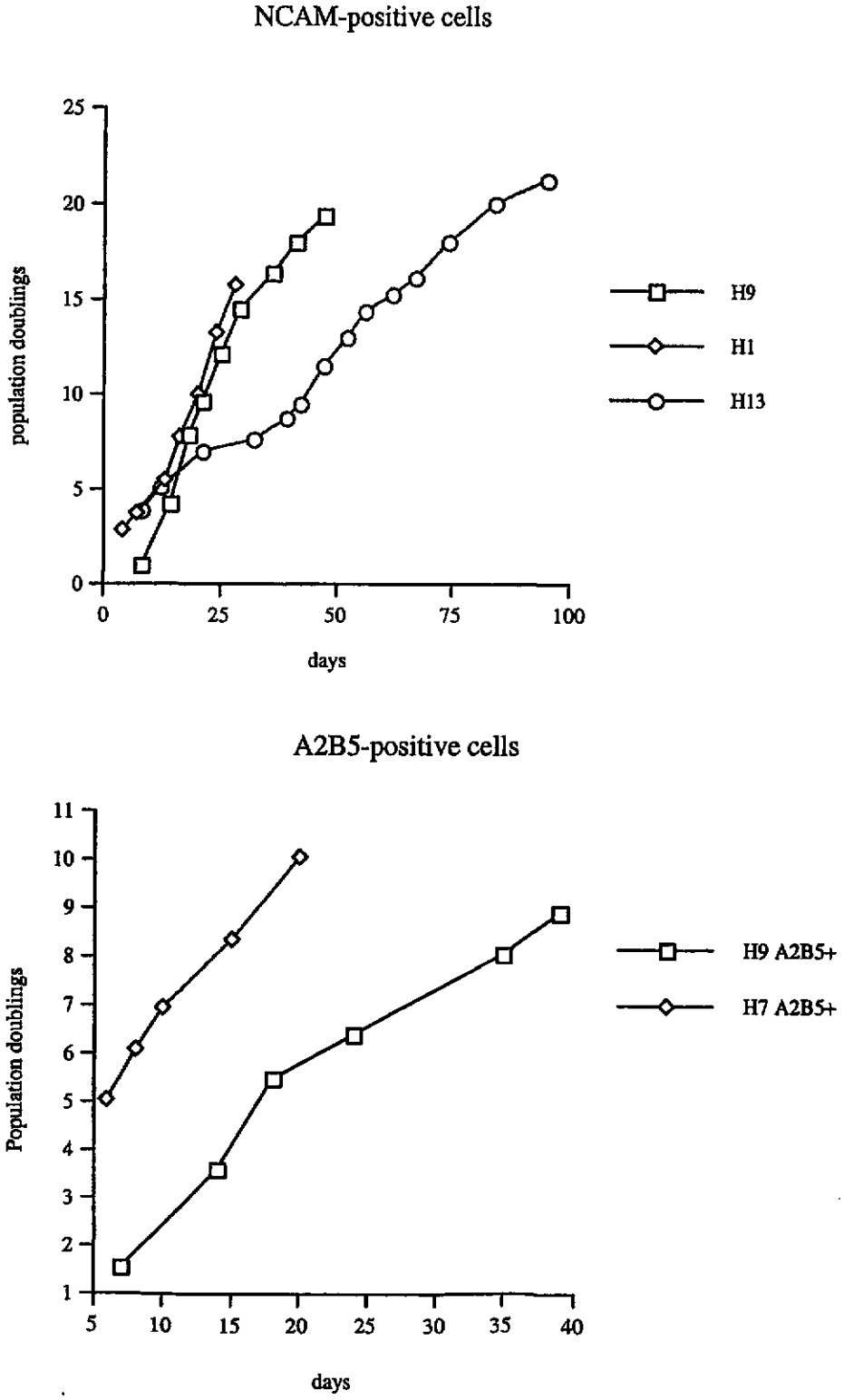

NCAM-positive cells
population doublings
25
20
15
10
5
0
0
25
50
75
100
days
H9
H1
H13
A2B5-positive cells
Population doublings
11
10
9
8
7
6
5
4
3
2
1
5
10
15
20
25
30
35
40
days
H9 A2B5+
H7 A2B5+

Figure 2

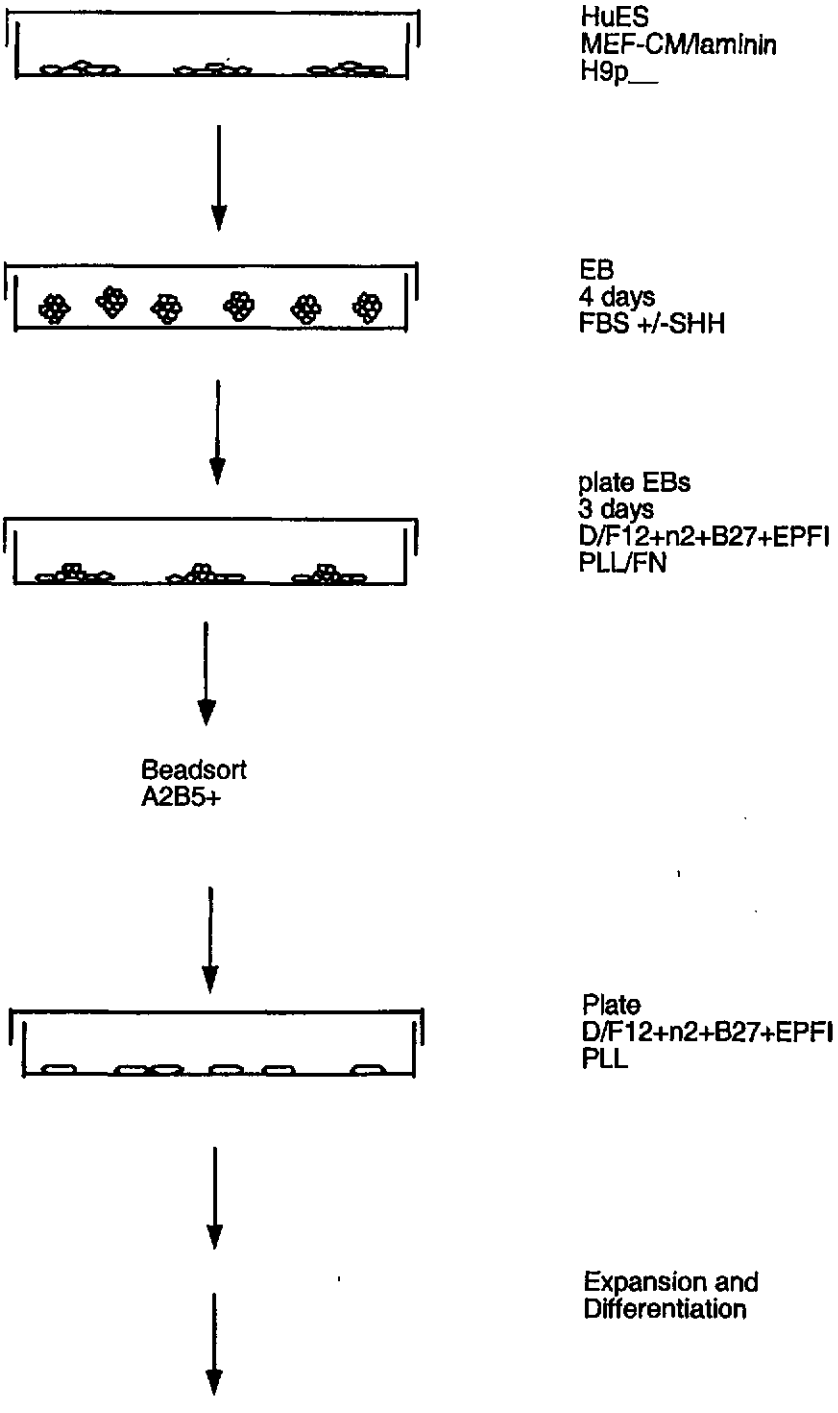

HuES
MEF-CM/laminin
H9p__
EB
4 days
FBS +/-SHH
plate EBs
3 days
D/F12+n2+B27+EPFI
PLL/FN
Beadsort
A2B5+
Plate
D/F12+n2+B27+EPFI
PLL
Expansion and
Differentiation

Figure 3

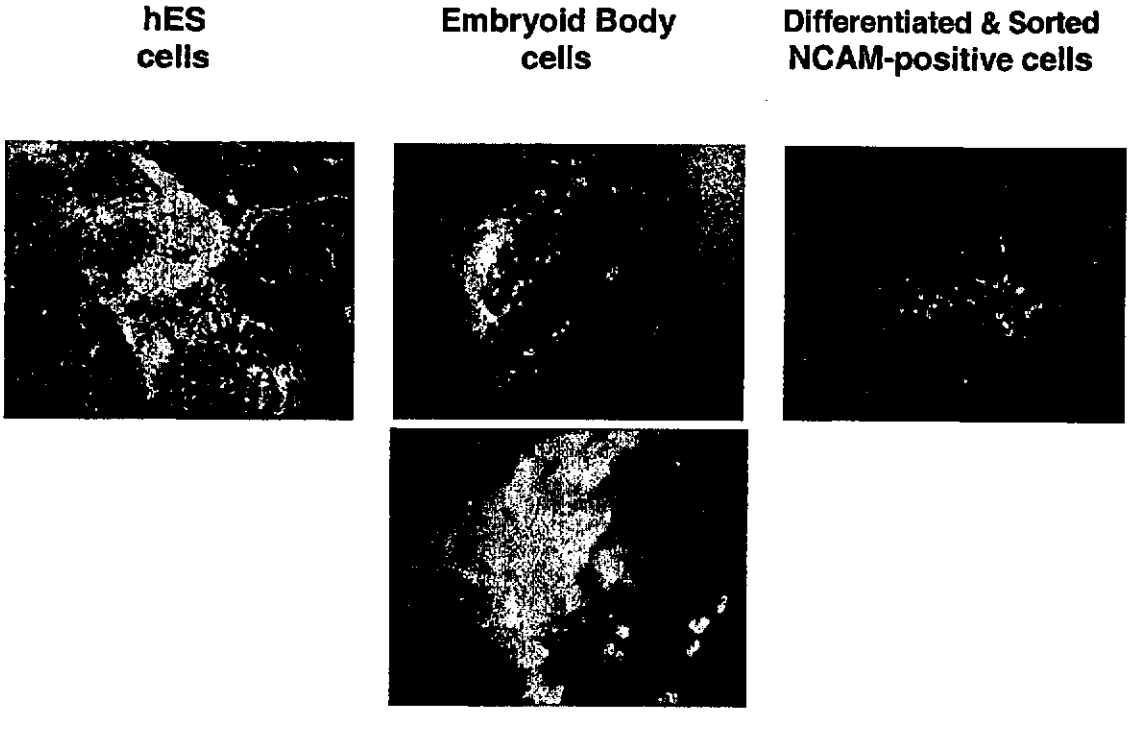

hES cells
Embryoid Body cells
Differentiated & Sorted NCAM-positive cells

Figure 4

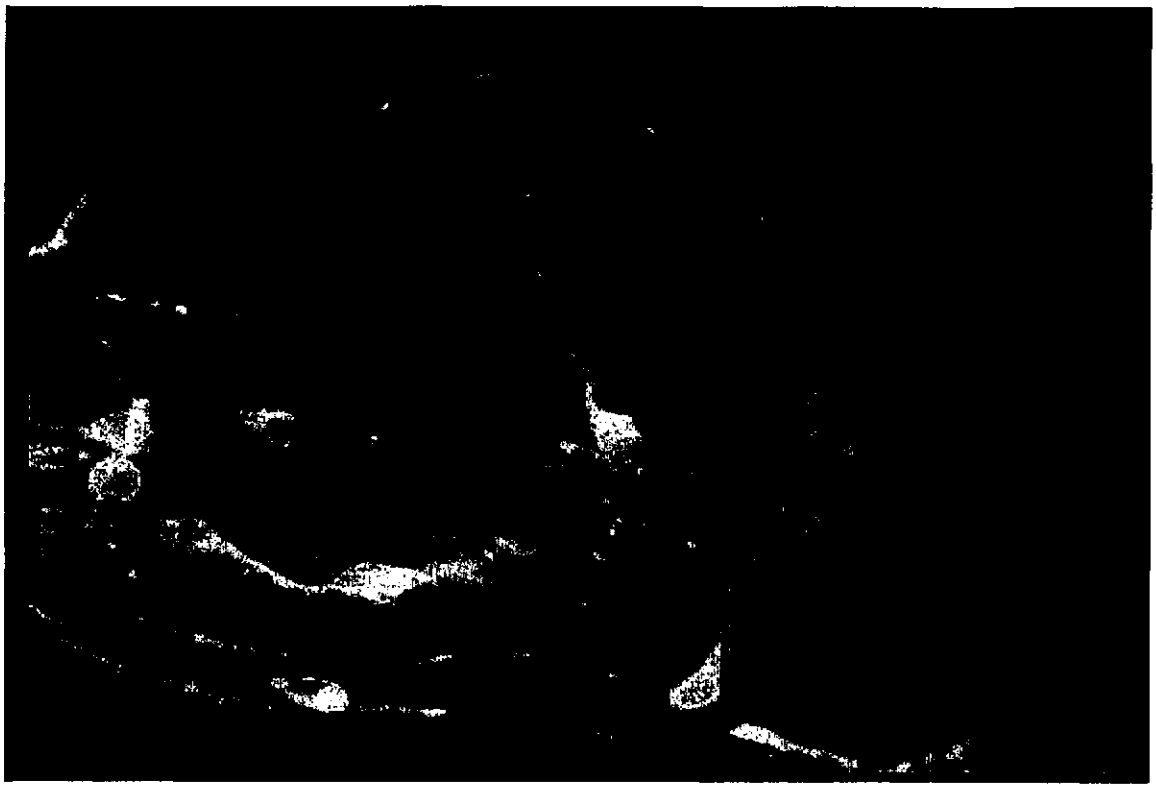


Figure 5

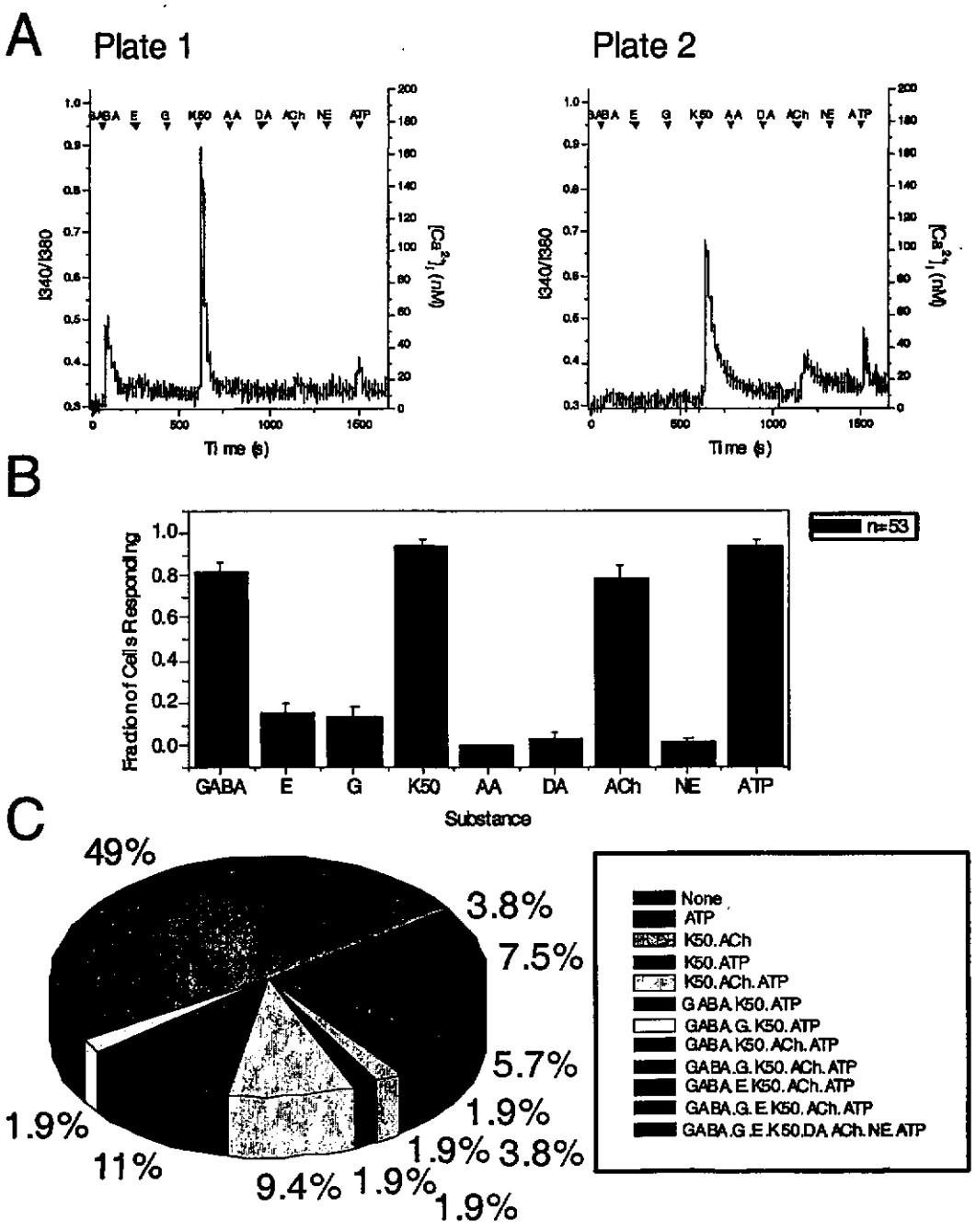
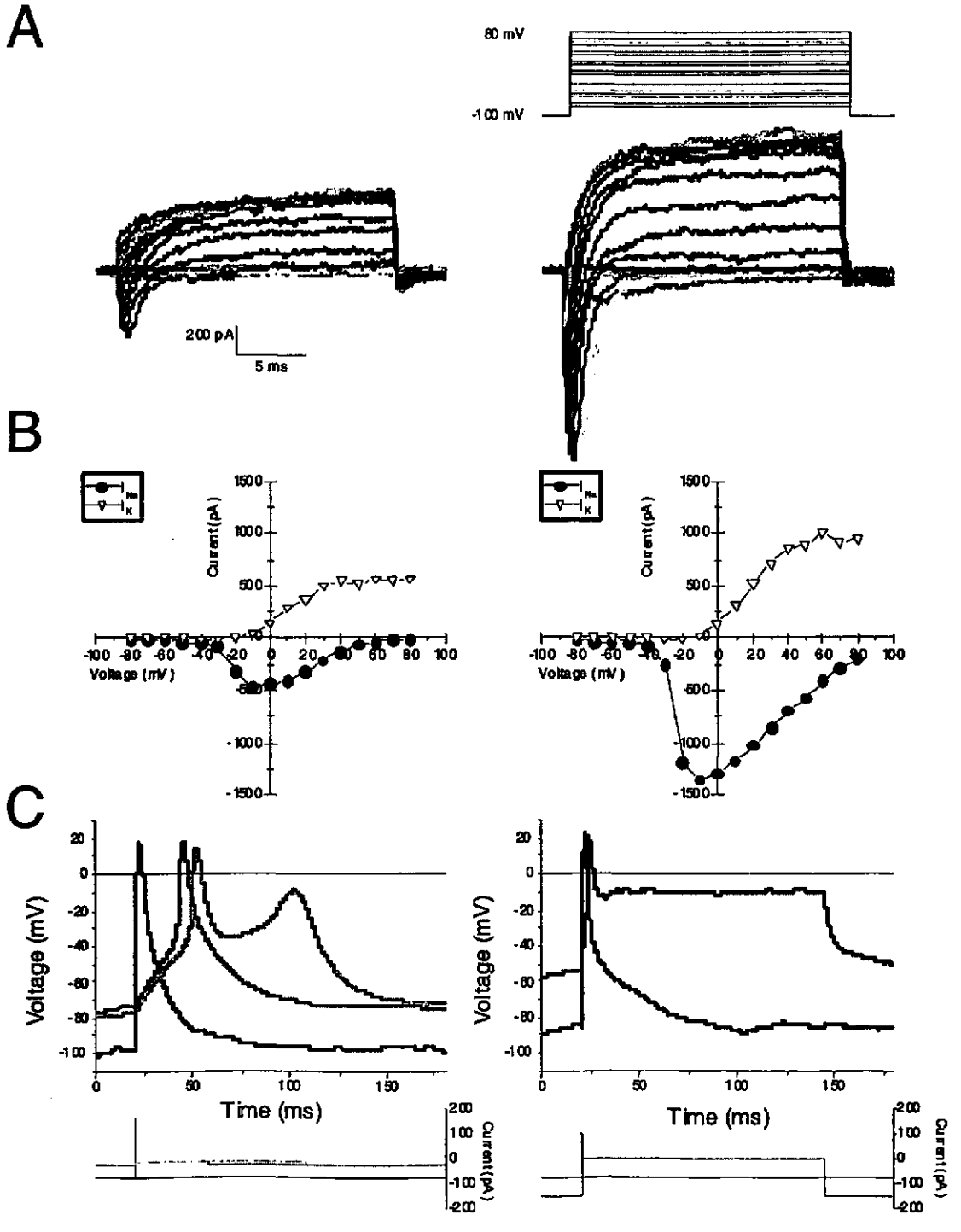

A
Plate 1
Plate 2
GABA E G K50 AA DA ACh NE ATP
I340/I380
[Ca2+]i (nM)
Time (s)
B
Fraction of Cells Responding
n=53
GABA E G K50 AA DA ACh NE ATP
Substance
C
49%
3.8%
7.5%
5.7%
1.9%
1.9%
1.9%
3.8%
1.9%
11%
9.4%
1.9%
1.9%
None
ATP
K50.ACh
K50.ATP
K50.ACh.ATP
GABA.K50.ATP
GABA.G.K50.ATP
GABA.K50.ACh.ATP
GABA.G.K50.ACh.ATP
GABA.E.K50.ACh.ATP
GABA.G.E.K50.ACh.ATP
GABA.G.E.K50.DA.ACh.NE.ATP

Figure 6


A
80 mV
-100 mV
200 pA
5 ms
B
Current (pA)
Voltage (mV)
C
Voltage (mV)
Time (ms)
Current (pA)