a

HL-1 cell

Cell 1 - by FET 1   Cell 2 - by FET 1   Cell 3 - by FET 2   Cell 4 - by FET 3

20 mV
1 s

Cell 5 - by patch clamp

20 mV
1 s

20 mV
0.05 s

b

Neonatal mouse cell

Cell 1 - by FET

20 mV
0.2 s

Cell 2 - by patch clamp

20 mV
0.2 s

20 mV
0.05 s

c

Adult mouse cell

Cell 1 - by FET

First insertion   Second insertion

20 mV
0.2 s

Cell 2 - by patch clamp

20 mV
0.2 s

20 mV
0.05 s

d

Normal
4 mM [K⁺]ₒ

Hyperkalemia
8 mM [K⁺]ₒ

Washout
4 mM [K⁺]ₒ

20 mV
1 s

0.1 s

e

Normal
140 mM [Na⁺]ₒ

Hyponatremia
70 mM [Na⁺]ₒ

Washout
140 mM [Na⁺]ₒ

20 mV
1 s

0.1 s

f Nifedipine (100 nM) in DMSO

i

20 mV
0.2 s

ii

Before adding drug
60 s after
120 s after

Time (ms)
280
210
140
70
0

APD50   APD90

g Tetrodotoxin (10 µM) in PBS

i

20 mV
0.2 s

ii

Before adding drug
60 s after
120 s after

Time (ms)
280
210
140
70
0

APD50   APD90