

STEPS IN THE ACTION POTENTIAL

1. The presynaptic neuron sends neurotransmitters to postsynaptic neuron. (A chemical message)
2. Neurotransmitters bind to receptors.
3. The neurotransmitters produce either an EPSP or an IPSP
4. The EPSP's and IPSP's sum together – either spatially or temporally.
5. The soma becomes more positive.
6. The more positive charge reaches the axon hillock.
7. Once the threshold of excitation is reached the neuron will fire an action potential.
8. The Na^+ channels open and Na^+ is forced into the cell by the concentration gradient and the electrical gradient.
9. The neuron depolarizes.
10. The K^+ channels open and K^+ is forced out of the cell by the concentration gradient and the electrical gradient.
11. The neuron continues to depolarize.
12. The Na^+ channels close at the peak of the action potential.
13. The neuron starts to repolarize.
14. The K^+ channels close, but they close slowly and K^+ leaks out.
15. The terminal buttons release neurotransmitter to the postsynaptic neuron.
16. The resting potential is overshoot and the neuron falls to a -90mV (hyperpolarize).
17. The Na^+/K^+ pump then starts to pump 3Na^+ ions out for every 2K^+ ions it pumps in.
18. The K^+ not pumped in, is diffused in the synapse.
19. The neuron begins to repolarize.
20. The neuron returns to resting potential.

