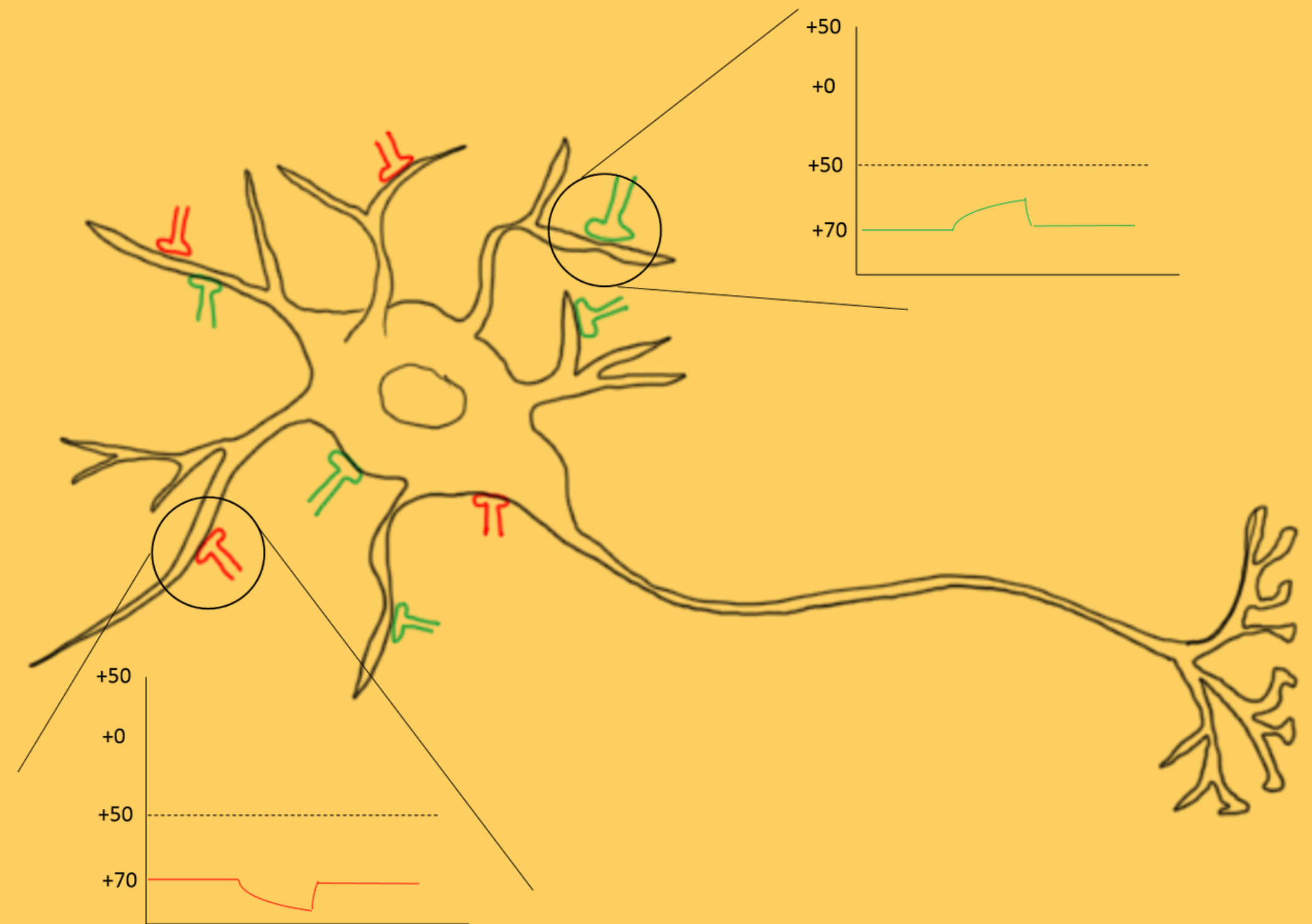


IPSP

Inhibitory Post-synaptic potential

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IPSP

- As an example of inhibitory post synaptic action, consider a neuronal synapse that uses GABA as its transmitter.
- At such synapses, the GABA receptors typically open channels that are selectively permeable to Cl^- .
- When these channels open, negatively charged chloride ions can flow across the membrane.

IPSP

- Assume that the postsynaptic neuron has a resting potential of -60 mV and an action potential threshold of -40 mV.
- If E_{Cl} is -70 mV, transmitter release at this synapse will inhibit the postsynaptic cell.
- Since E_{Cl} is more negative than the action potential threshold.
- It reduces the probability that the postsynaptic cell will fire an action potential.

IPSP

- Some types of neurotransmitters, such as glutamate, consistently result in EPSPs
- Others, such as GABA, consistently result in IPSPs.
- The EPSPs and IPSPs can last as long as 5 to 10 msec. This allows the effect of one postsynaptic potential to build upon the next and so on.