

- the resting membrane potential results from a balance in the permeability of Na^+ (low perm) and K^+ (high perm), maintained by the Na/K-ATPase .
- the action potential arises from the membrane's selective permeability to Na^+ and K^+ ions via the gating of voltage-dependent ion channels
- the sodium channel also has a voltage-independent gate that is responsible for fast inactivation (linked to conformational stability)
- highly potent and selective toxins occurring in nature have been critical for understanding how ion channels function

4. Demonstrate how key experiments relate to our knowledge of the nervous system.

- Hodgkin and colleagues took advantage of the squid giant axon to make early electrophysiological recordings of the action potential and showed how it was composed of Na^+ and K^+ conductances
- Neher and Sakmann's patch clamp technique allowed scientists to study the properties of individual ion channels
- expressing channels (and their mutants) in heterologous cells makes it easier to study their properties

Questions→

What are some key experiments in finding out this?

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