

### **Ion pumps and the resting potential**

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The plasma membrane resting potential has been described as resulting from local, slight, electric charge displacement within membrane. The Nerst formula is derived from local balance of electric, thermodynamic and mechanical forces. The resting potential can be identified with steady diffusion potential when the ion pumps operate just to keep ionic concentrations at constant levels. Equivalent circuit analysis showed that for one ion, e.g. potassium, to be in thermodynamic equilibrium, the other ion, e.g. sodium, must be pumped against the electrochemical potential with definite intensity.