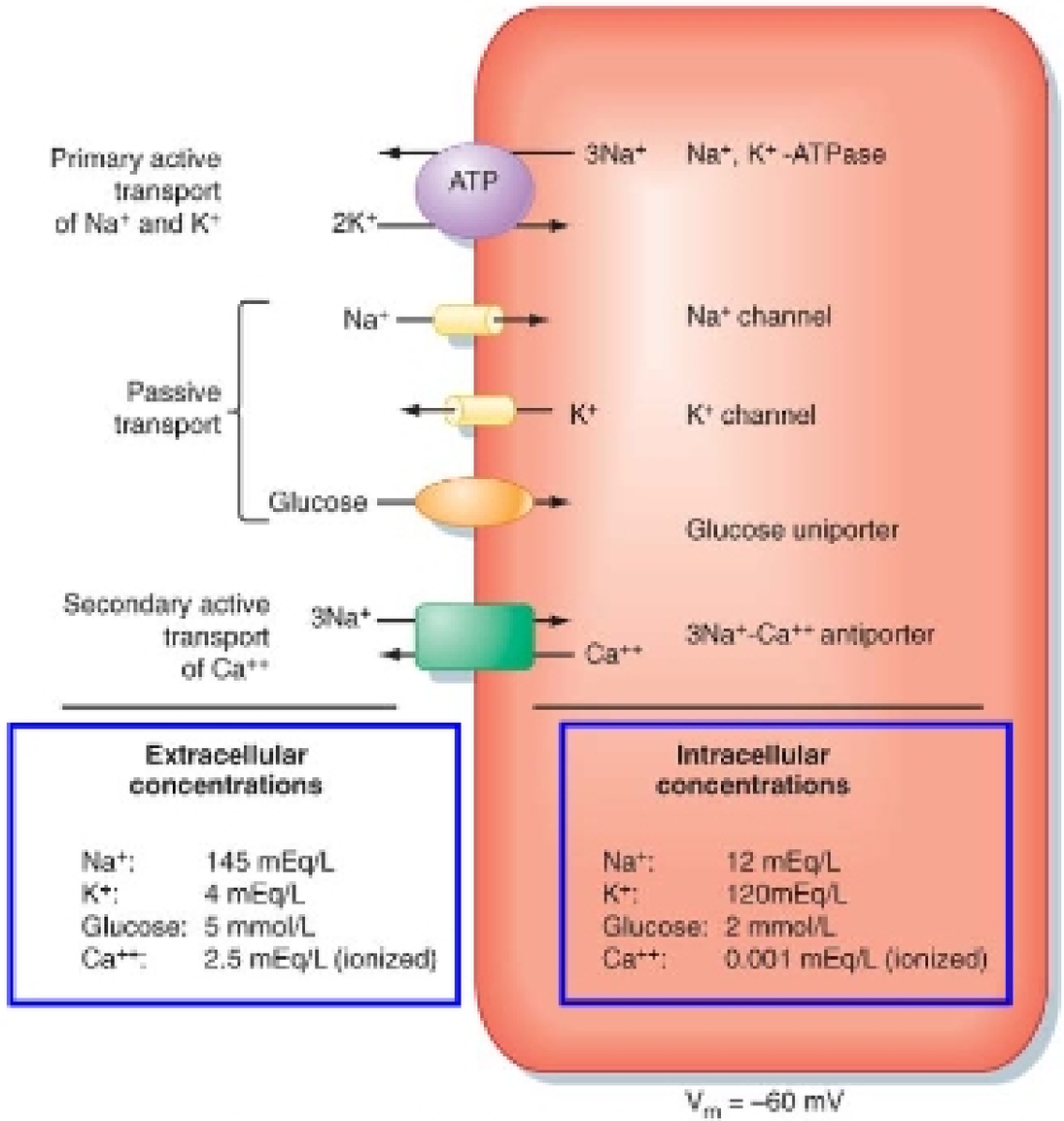
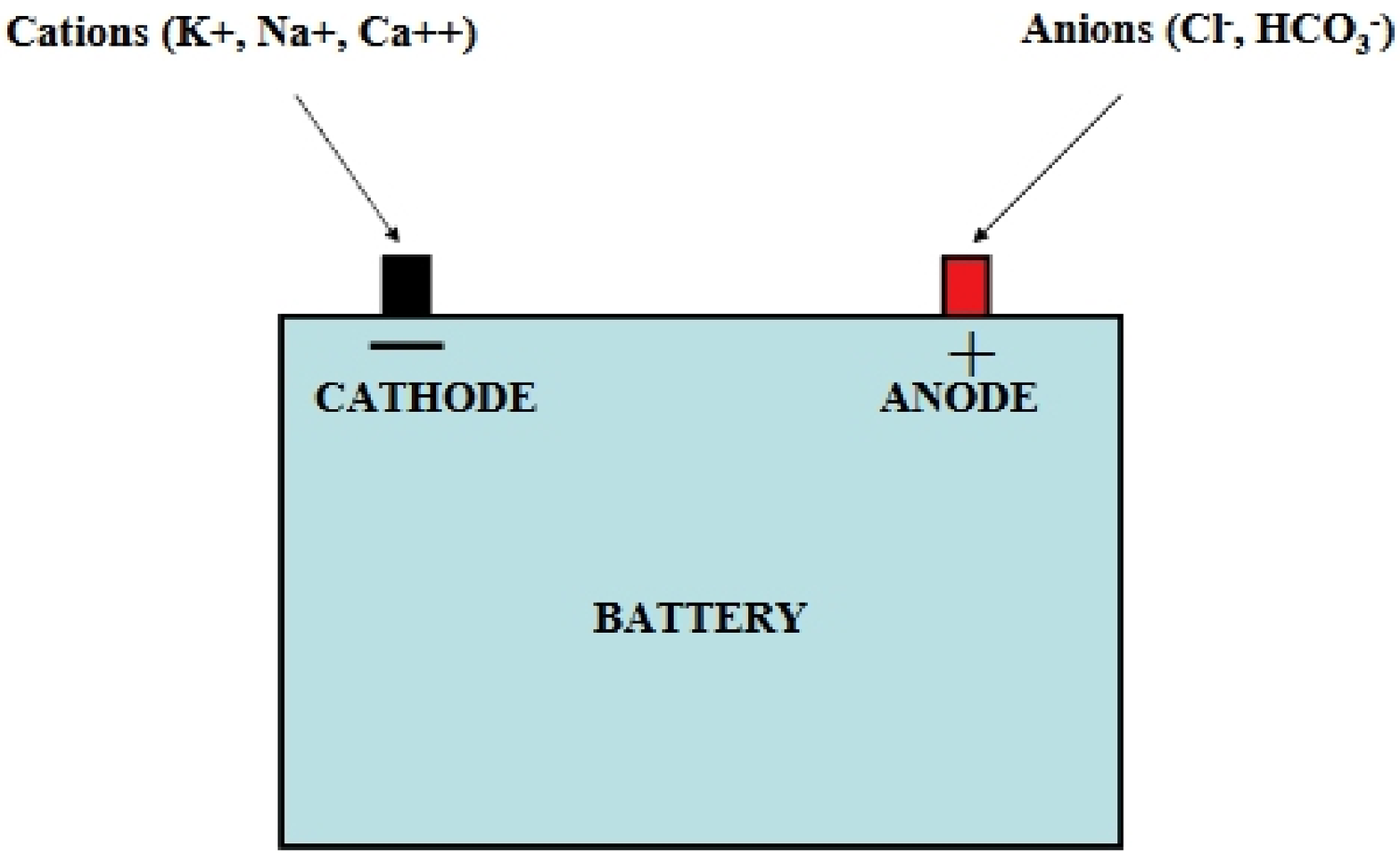


Fig. 1-8 B&L


Cations (K+, Na+, Ca++)
Anions (Cl-, HCO3-)
CATHODE
ANODE
BATTERY

Equation 1-4
p13 B&L

$$\Delta\mu_x = RT\ln\frac{[X]_i}{[X]_o} + Z_xFV_m$$

ΔC ΔE

(Nernst Equation)

Δ= <u>difference</u> (gradient) across the membrane

μ = electrochemical potential measured in mV

$\Delta\mu_x$ = electrochemical potential difference across the membrane for ion X

R = Ideal gas constant

T = absolute temperature

ln = natural logarithm

$[X]_i/[X]_o$ = concentration difference across the membrane for ion "X"

ΔC = <u>chemical</u> potential difference across the membrane for ion "X"

Z = charge on ion: Na^+=+1, K^+ = +1, Cl^- = -1, Ca^{2+} = +2

F = Faraday's constant

V_m = <u>electrical</u> difference across the membrane in mV

ΔE = electrical potential difference across the membrane for ion 'X"