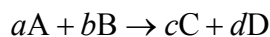


$$K_{eq} = \frac{[C]^c [D]^d}{[A]^a [B]^b}$$

for the reaction :



$$F = \frac{kQ_1Q_2}{\epsilon r^2}$$

$$\text{pH} = \text{pK}_a + \log\left(\frac{[A^-]}{[HA]}\right)$$

$$K_a = \frac{[PL]}{[P] \cdot [L]} = \frac{k_a}{k_d}$$

$$K_d = \frac{[P] \cdot [L]}{[PL]} = \frac{k_d}{k_a}$$

$$\theta = \frac{[L]}{K_d + [L]}$$

$$\theta = \frac{pO_2}{P_{50} + pO_2}$$

$$V_o = \frac{V_{\max} [S]}{K_m + [S]}$$

$$V_{\max} = k_{cat} \cdot [E_T]$$

$$\text{specificity constant} : \frac{k_{cat}}{K_m}$$

$$\alpha = 1 + \frac{[I]}{K_I}$$

$$K_I = \frac{[E] \cdot [I]}{[EI]}$$

$$K_m = \frac{k_{-1} + k_2}{k_1}$$

$$R = 0.00831 \text{ kJ/mol} \cdot \text{K}$$

$$T(\text{in K}) = 273 + \text{temp in } ^\circ\text{C}$$

$$\mathcal{F} = 96.5 \text{ kJ/V} \cdot \text{mol}$$

Approximate pK_a values of ionizable groups of amino acids and peptides (side chains listed unless otherwise noted):

Aspartate: 4

Glutamate: 4

Histidine: 6

Cysteine: 8.5

Tyrosine: 10.5

Lysine: 10.5

Arginine: 12.5

Serine: 13

Threonine: 13

α -carboxyl of free amino acid: 2

α -amino of free amino acid: 9.5

C-terminal carboxyl of peptide: 3

N-terminal amino of peptide: 8

α -helix

100° rotation per residue

3.6 residues per turn

5.4 Å rise per turn

ideal dihedral angles: $\phi = -57^\circ$, $\psi = -47^\circ$

parallel β -sheet

repeat length = 6.5 Å (3.25 Å/residue)

ideal dihedral angles: $\phi = -119^\circ$, $\psi = +113^\circ$

antiparallel β -sheet

repeat length = 7 Å (3.5 Å/residue)

ideal dihedral angles: $\phi = -139^\circ$, $\psi = +135^\circ$

Fatty Acids

12:0 – lauric acid

14:0 – myristic acid

16:0 – palmitic acid

18:0 – stearic acid

18:1(Δ^9) – oleic acid

18:2($\Delta^{9,12}$) – linoleic acid

18:3($\Delta^{9,12,15}$) – α -linolenic acid

20:4($\Delta^{5,8,11,14}$) – arachidonic acid

20:5($\Delta^{5,8,11,14,17}$) – EPA

22:6($\Delta^{4,7,10,13,16,19}$) – DHA

