

Things you should know - Bio 98B

Lecture 1&2

hydrogen bond
bond dissociation energy
hydrophilic
hydrophobic
amphipathic
micelle
hydrophobic interaction
van der Waals interaction
van der Waals radius
hydronium ion
equilibrium constant (K_{eq})
ion product
pH, neutral pH, pH scale
conjugate acid-base pair
dissociation constant
pKa
relationship [H⁺] to pH
titration curve
pH buffer
Henderson-Hasselbalch equation

Lecture3-5

amino acid residue
R groups
chiral center
enantiomer
optically active
D,L system
polarity
zwitterion
Lambert-Beer law
UV-vis of aromatic AAs
isoelectric point, pI
peptide
protein
peptide bond
oligopeptide
polypeptide
amino-terminal
carboxyl-terminal
multisubunit
oligomeric
protomer
primary structure
secondary structure

tertiary structure
quaternary structure
crude extract
fractionation
dialysis
column chromatography
cation-exchanger
anion-exchanger
size-exclusion chromatography,
aka gel-filtration
affinity chromatography
electrophoresis
SDS (sodium dodecyl sulfate)
isoelectric focusing
two-dimensional electrophoresis
activity, specific activity
Edman degradation
Proteases
Disulphide bonds – DTT or bME
reduces them.
tandem electrospray MS (MS/MS)

Lecture6

native proteins
stability
solvation layer
peptide group
secondary structure
_helix
_ conformation/structure
_ sheet
_ turn
tertiary structure
quaternary structure
fibrous proteins
globular proteins
keratin
domain
denaturation
renaturation

Lecture7

ligand
binding site
induced fit
substrates
catalytic site, active site
heme

protoporphyrin
porphyrin ring
globins
dissociation constant
(for protein-ligand)
R-state, T-state
deoxyhemoglobin
allosteric protein
homotropic, heterotropic
concerted model
sequential model
Bohr effect
2,3-bisphosphoglycerate,
aka BPG

Lecture8-10

enzyme
prosthetic group
active site
substrate
ground state, G_0
transition state
activation energy, G^\ddagger
reaction intermediates
rate-limiting step
rate constant
specificity
general acid-base catalysis
covalent catalysis
catalytic triad
enzyme kinetics
initial rate/velocity, v_0
maximum velocity, v_{max}
steady-state kinetics
Michaelis constant, K_m
Michaelis-Menten equation
Michaelis-Menten kinetics
Line-Weaver Burk equation
chymotrypsin
Enzyme efficiency
reversible inhibition
competitive inhibitor
irreversible inhibition
suicide inhibitor/inactivator
enzyme regulation
regulatory and catalytic domains
feedback inhibition
activators

inhibitors
phosphorylation
allosteric protein
homotropic, heterotropic

Lecture11

monosaccharide
disaccharide
oligosaccharide
polysaccharide
aldose
ketose
epimer
anomer
mutarotation
Haworth perspectives
reducing sugar
O-glycosidic bond
reducing end
glycans
homopolysaccharide
heteropolysaccharide
starch

Lecture12

fatty acid
fat
triacylglycerol
triglyceride
glycerophospholipid
ceramide
sphingomyelin
cerebrosides
gangliosides
sterol
cholesterol

Lecture13

Gibbs free energy
enthalpy
entropy
equilibrium constant
mass action ratio (Q)
phosphorylation potential
thioester