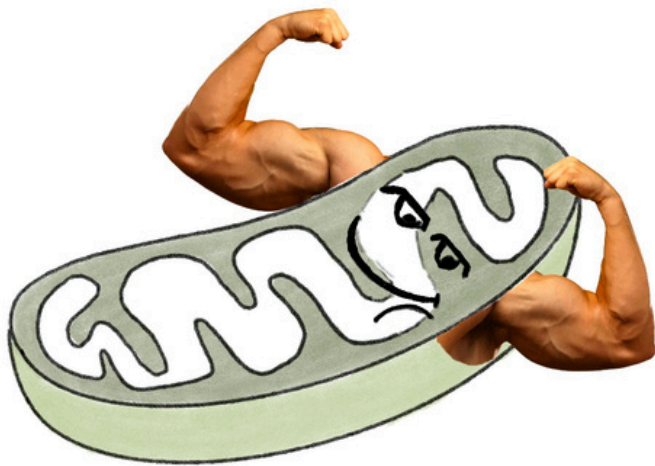


AP BIOLOGY

PROTEIN

STRUCTURE



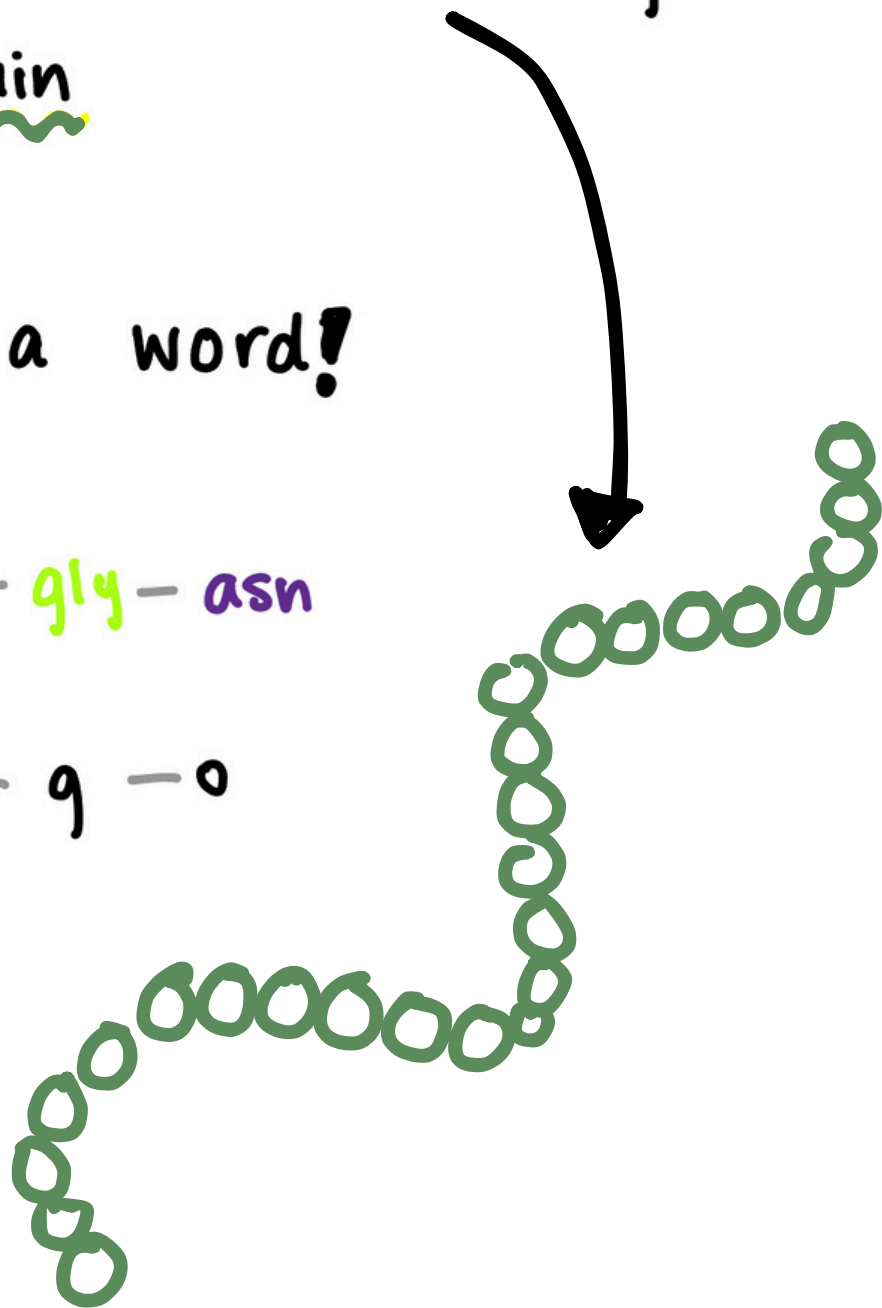
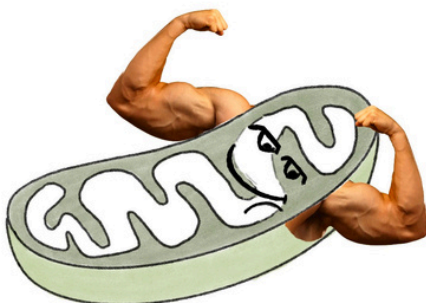
1. Primary structure

- Sequence of amino acids linked together in a polypeptide chain

→ letters in a word!

gln — glu — phe — gly — asn

m — a — n — q — o

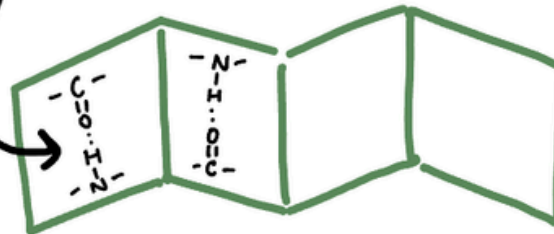


2. Secondary Structure

- polypeptide chains coil or fold into α helix or β pleated sheet through hydrogen bonding between N-H & Carbonyl group.

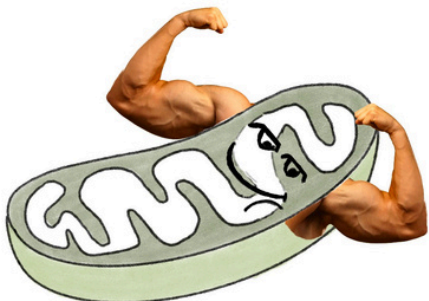


α helix



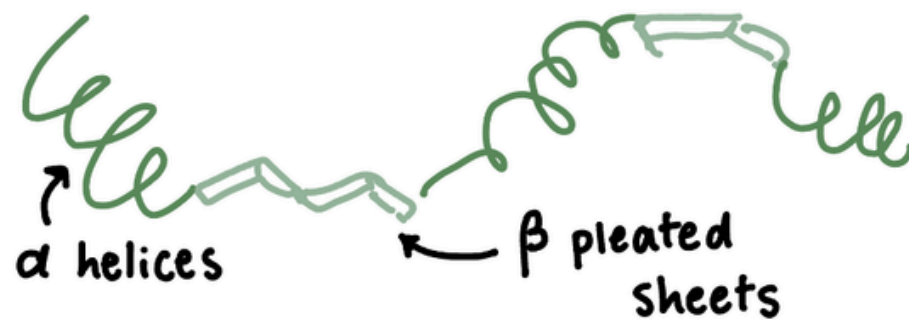
β pleated sheet

→ think of them as words! $m \cdot a \cdot n \cdot q \cdot o$

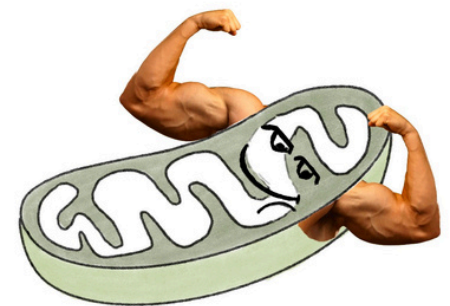


3. Tertiary structure

- 3D folding pattern defining overall shape of protein
- structures held by disulfide bridges & ionic bonds

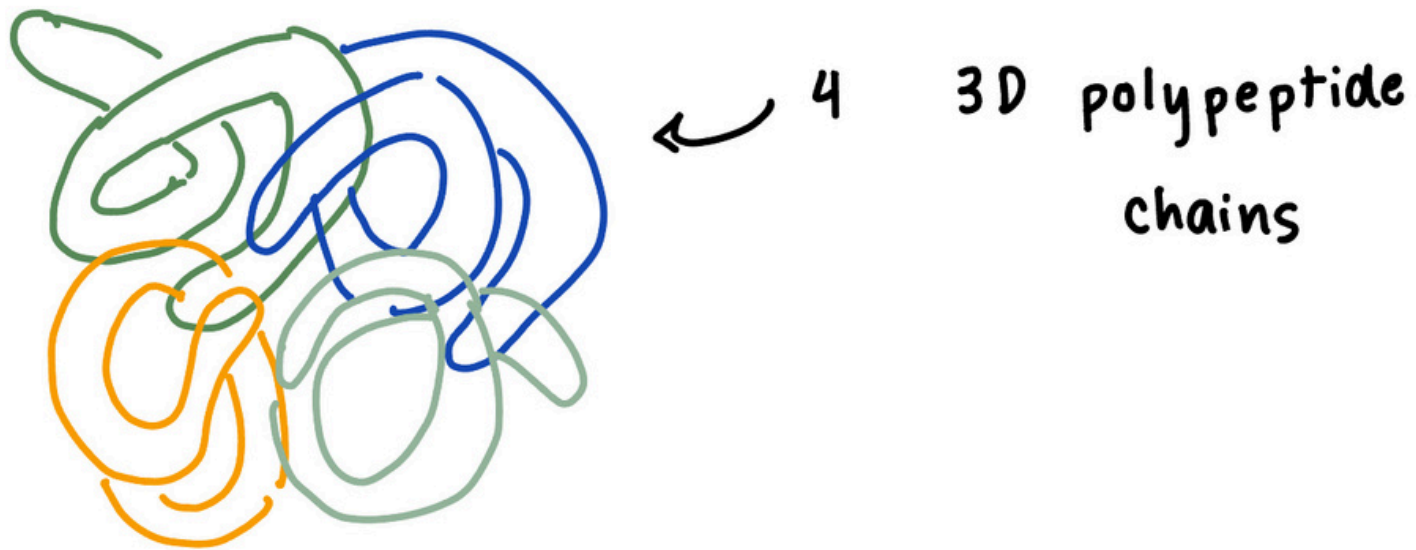


→ think of them as sentences !
mangos are amazing



4. Quaternary structure

- proteins consisting of more than 1 3D polypeptide chain



→ think of them as paragraphs!

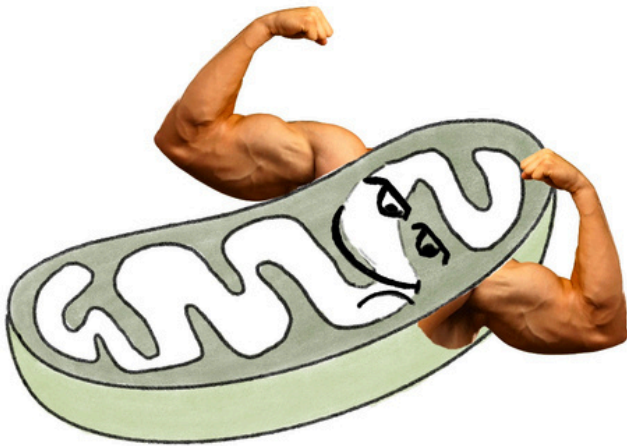
mangos are amazing because they are
delicious . . .



AP BIOLOGY

MEMBRANE TRANSPORT

REVIEW



Passive transport : moves **WITH**
concentration gradient

→ NO ATP , high → low concentration

Active transport : moves **AGAINST**
concentration gradient

→ ATP needed, low → high concentration

PASSIVE TRANSPORT

simple diffusion: small nonpolar molecules (O_2 , CO_2) straight through phospholipid bilayer

facilitated diffusion: protein channel/carrier for polar/charged/large molecules

→ remember, **no ATP needed**

osmosis: diffusion of water

ACTIVE TRANSPORT

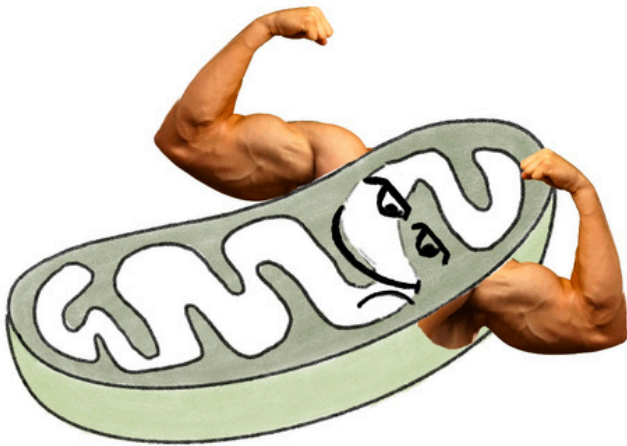
primary active transport: directly using ATP (eg. Na^+/K^+ pump)

secondary active transport: uses gradient created by primary transport → "borrowed" energy

AP BIOLOGY

OSMOSIS & TONICITY

REVIEW



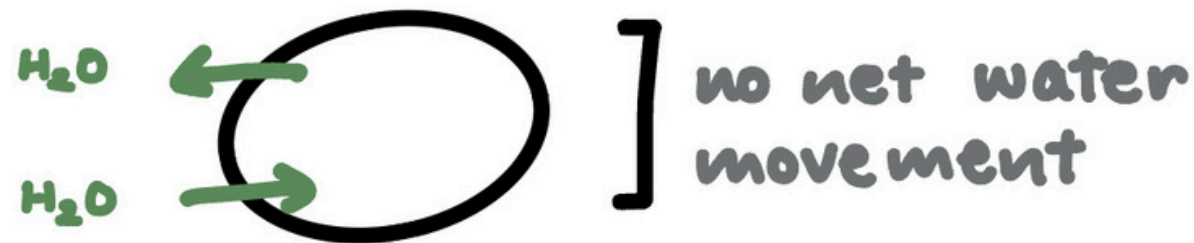
Osmosis: diffusion of **WATER**
across a semi-permeable membrane

LOW → HIGH solute concentration

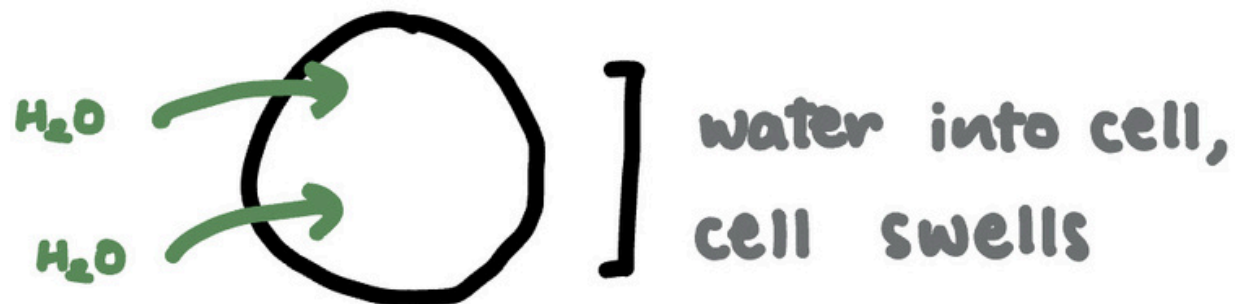
NO ATP needed

TONICITY STATES

Isotonic: solute concentrations **EQUAL**
inside & outside of cell

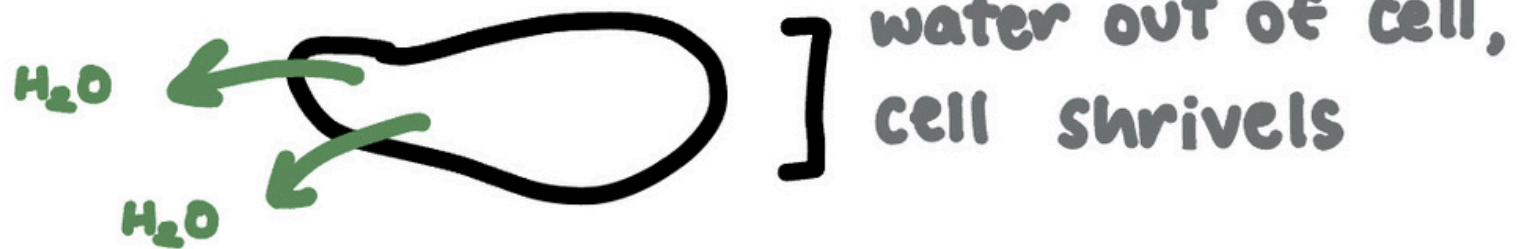


Hypotonic: solute concentrations **LESS**
outside of cell



TONICITY STATES

Hypertonic: solute concentrations
GREATER outside of cell



**follow for
more !**

