

November 17 Biomolecules

MOLECULES OF LIFE

A. CARBOHYDRATES:

*organic compounds composed of

C, H, O

ratio 1:2:1 $(CH_2O)_n$

Example: $(CH_2O)_6 \gggg>> C_6H_{12}O_6$

1) Monosaccharide - simple monomer of sugar
glucose, fructose, galactose

Isomer : single chemical formula,
different form(see p 55)

2) Disaccharide -

monosaccharide + monosaccharide =
disaccharide

ex: sucrose, maltose, lactose

3) polysaccharide - (oligosaccharide)

mono + mono + mono = polysaccharide
(3 or more mono)

ex: starch, glycogen, cellulose

POLYSACCHARIDE

Starch

plant sugar

potato

highly branched

Glycogen

animal starch

human sugar storage

store in liver &

skeletal muscle

Cellulose

plants

fiber

long &

coiled

PROTEINS

Organic compounds composed of C H O N

- macromolecule made of linked monomers

- see p. 56

AMINO ACID - a monomer building block of
a protein

-COOH : carboxyl group

-NH₂ : amino group

-R : a functional group

Draw here _____

PEPTIDES

Peptide : a protein unit

peptide + peptide + peptide = polypeptide

Peptide bond : the bond that covalently
bonds or links peptides (condensation)

AA + AA = Protein

Characteristics of proteins:

- *catalysts called enzymes
- * make up skin & muscle of animals
- * fold & bend ...shape effected by temp,pH,
and solvents

ENZYMES

-organic carbon molecules that act as catalysts

-essential for cell functioning

How do they work?

-see pix p. 57

-rxn depends on a physical fit btwn

Enzyme & Substrate
molecule & reactant being catalyzed

Lock & key fit

MODEL OF ENZYME ACTION

(lock & key)

1. substrate & enzyme link
2. enzyme changes shape
3. substrate bonds are weakened(act. enrgy)
4. after rxn, enzyme releases products
5. enzyme remains unchanged for another rx.

Draw here:

