(a) Monosaccharides

<table>
<thead>
<tr>
<th>Monosaccharide</th>
<th>Molecular Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td><img src="image" alt="Glucose Molecule" /></td>
</tr>
<tr>
<td>Fructose</td>
<td><img src="image" alt="Fructose Molecule" /></td>
</tr>
<tr>
<td>Galactose</td>
<td><img src="image" alt="Galactose Molecule" /></td>
</tr>
<tr>
<td>Deoxyribose</td>
<td><img src="image" alt="Deoxyribose Molecule" /></td>
</tr>
<tr>
<td>Ribose</td>
<td><img src="image" alt="Ribose Molecule" /></td>
</tr>
</tbody>
</table>

Polysaccharide

- ![Polysaccharide Structure](image)

Fatty Acid

- ![Fatty Acid Structure](image)

Prostaglandin

- ![Prostaglandin Structure](image)

Triglyceride

- ![Triglyceride Structure](image)
Protein Structure

(a) Primary structure
Linear chain of amino acids

(b) Secondary structure
Alpha-helix

OR

(b) Secondary structure
Pleated sheet

OR

(c) Tertiary structure
Hemoglobin (globular protein)

(d) Quaternary structure
Keratin or collagen (fibrous protein)

Protein bond formation

Glycine (gly) → Dehydration synthesis → Hydrolysis → Alanine (ala)

Peptide bond

Cofactor
Enzyme Function

Marieb Figure 2.21

Enzyme Function

Substrates bind to active site of enzyme

Step 1: Substrates bind to active site of enzyme

Enzyme-substrate complex

Step 2: Aided by enzyme, substrates interact to form product

Phosphate group

Pentose sugar

Nitrogenous base

Nucleotide structure

Adenine nucleotide

(a)

Anthrop Zure, Ph.D.
Nucleotide assembly

(a) Purines

- Adenine
- Guanine

(b) Pyrimidines

- Cytosine
- Thymine (DNA only)
- Uracil (RNA only)

5' End

3' End

3' End

5' End

Deoxyribose

Phosphate group

DNA Hydrogen bond

RNA molecule

DNA strand 1

DNA strand 2

(a) RNA molecule

(b) DNA molecule

Adenine

High-energy bonds

Phosphate

AMP

ADP

ATP

Adenosine monophosphate

Adenosine diphosphate

Adenosine triphosphate

Adenine

Ribose

Phosphates