Topics

Some Protein Structures
Introduction to Nucleic Acids
- Composition of DNA
  - Structural basis for genetic code
Nucleosides
Nucleotides
Primary + Secondary Structure of DNA

Look at Protein Structure (overheads)
Proteins adopt strict structures in vitro before, these are not always fully predictable from the primary structure

Nucleic Acids

DNA → only G compounds out

Phosphoric Acid 2-deoxy-D-ribose
\[
\begin{align*}
\text{H}_3\text{PO}_4 & \\
\text{HO-} & \\
\text{OH} & \\
\end{align*}
\]

\[
\begin{align*}
\text{HO-} & \\
\text{OH} & \\
\end{align*}
\]

D-ribose
\[
\begin{align*}
\text{HO} & \\
\text{OH} & \\
\text{OH} & \\
\text{OH} & \\
\text{H} & \\
\end{align*}
\]

(Furanose) parent compound

write on this side only - do not double side for genchem office
Adenine (A)  Guanine (G)  Cytosine (C)  Thymine (T)

Purines  Pyrimidines

Partial hydrolysis gets fragments back bone w/ base hanging off (-“sugar”-phosphate)-

Base this monomer forms basic DNA, codes by a triplet base coding system $4^3 = 64$ possible combinations

P. 530 shows the triplet base codes in RNA language

Nucleosides

Pyrimidine Nucleoside  Purine Nucleoside

5'-deoxycytidine  5'-deoxyadenosine

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\begin{align*}
\text{3'-monophosphate} & \quad \text{5'-monophosphate} \\
\text{deprotonated (chemically)} & \quad \text{denatured}
\end{align*}

\text{essential structure of DNA}