Chem 352, Fundamentals of Biochemistry
Lecture 11: Nucleic Acids
Supplemental Questions

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1. Draw the structures for the nucleotides used to synthesize RNA and DNA

    a. Illustrate the Watson-Crick base-pairing that occurs between these nucleotides.

2. Explain why Watson and Crick's model for the DNA molecule received immediate acceptance.

3. Explain why DNA rich in GC base pairs has a higher melting point than DNA rich in AT base pairs.

4. Explain how the chemical differences for the structure of deoxyribonucleotides give rise to a DNA structure that is different than that for RNA.

5. What biological role do restriction endonucleases play?

    a. Describe the characteristics of the cleavage sites for restriction endonucleases.

    b. How are restriction endonucleases utilized in DNA fingerprinting?

6. The model that Watson and Crick proposed for DNA is for the "B" form of DNA. Describe the structures for other forms of DNA.

7. The nucleotide composition for DNA isolated from different sources is different, however, the ratio of adenine (A) to thymine (T) and guanine (G) to cytosine (C) is usually found to be near 1. Explain why this is expected.