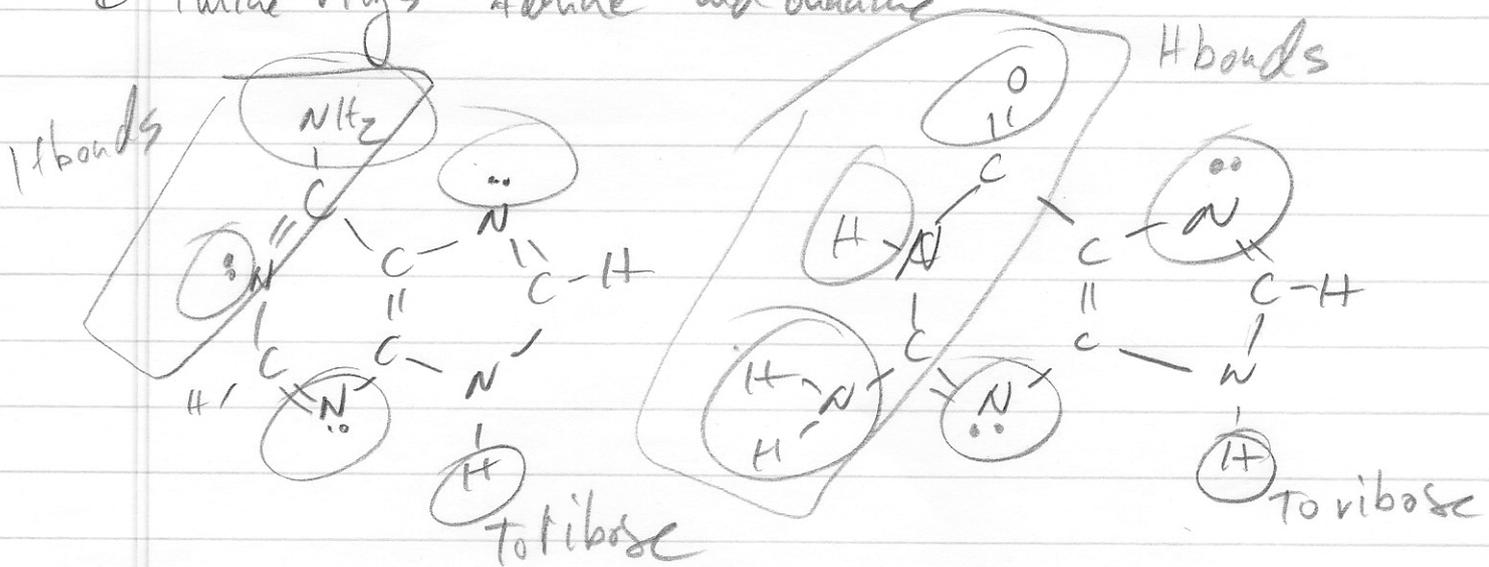


# Chapter 8: 1, 2, 10, 11, 14, 18

① Purine rings: Adenine and Guanine



residues outside the box that are circled can H-bond but don't.

②

ACGCAATATTTCTC	AAAATATT	GCGC
CGCGTTATAAAGAGTTT	TATAAC	CGCG

Palindromic

- Can form a hairpin or a cruciform structure

⑩ When the hydrogen bonds are broken between the Watson-Crick base pairs, the electrons in the aromatic rings can both absorb incident electrons

Two things make the hyperchromic effect happen:

- i)  $\pi$ - $\pi$  stacking interactions along the helical axis
- ii) Hydrogen bonding perpendicular to the helical axis

$$\textcircled{11} F + A_{260} = [\text{Protein}]$$

$$R = \frac{A_{260}}{A_{280}} = \frac{0.69}{0.94} = 0.73$$

9% nucleic acid but we don't read that:

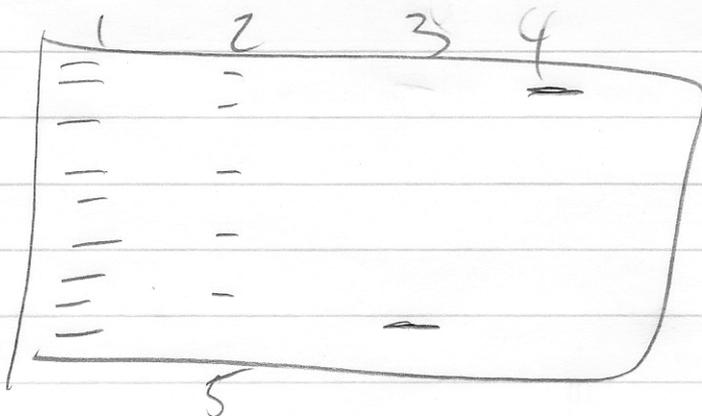
$$[\text{Prot}] = (0.508) (0.69)$$

$$[\text{Prot}] = 0.35 \text{ mg/ml}$$



- ① ddATP    ② ddGTP    ③ ddTTP - no dTP    ④ no ddNTPs

As the polymerase adds deoxynucleotides to the 3' end of the upper oligonucleotide, if a dideoxynucleotide is added, the chain can't be extended anymore. Count the # of dideoxynucleotides that would be added and that will be the # of bands.



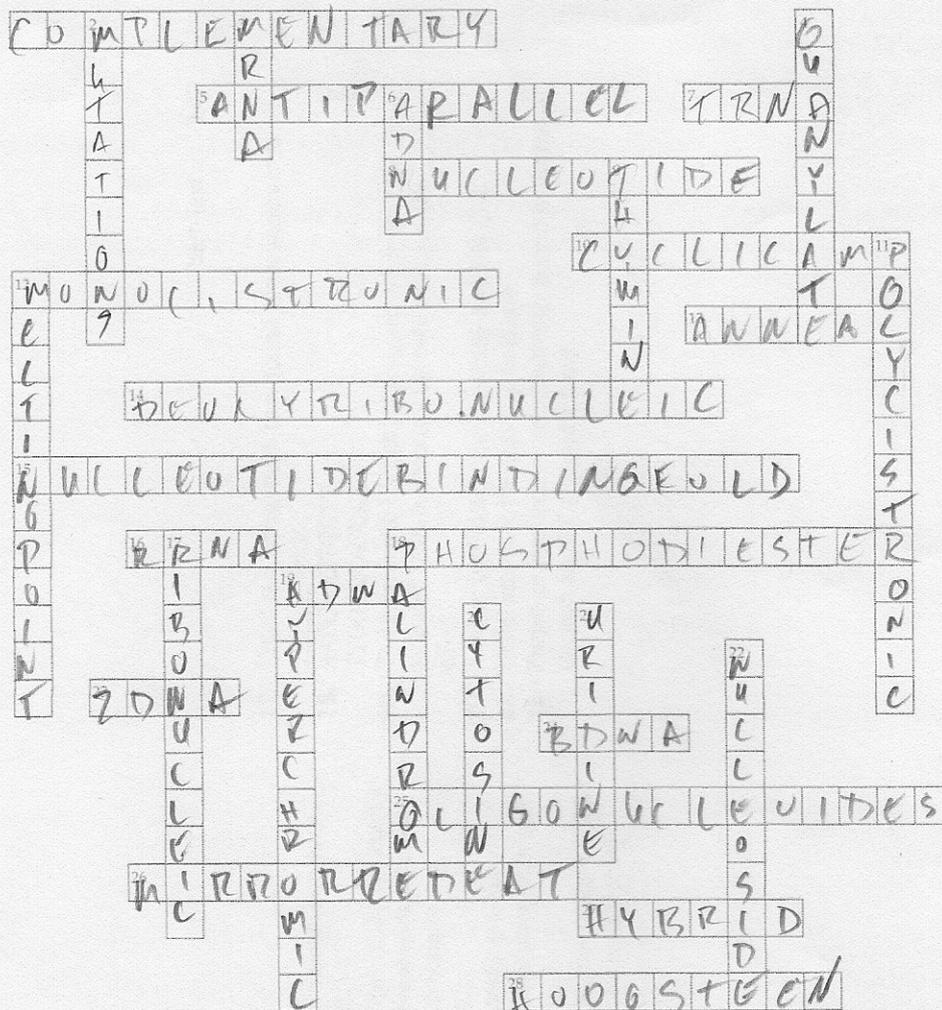
⑱ a) Right handed helix

b) left handed helix

c) have fun with this one

# SELF-TEST

## Do You Know the Terms?



### ACROSS

1. These two strands are \_\_\_\_\_ to each other.

AATGCGGTCCTAT  
TTACGCCAGGATA

5. 3' → 5'

5' ← 3'

7. A ribonucleic acid involved in protein synthesis; it binds amino acids.

8. Contains a phosphate group in an ester linkage to a ribose sugar and a nitrogenous base.

10. A common intracellular signaling molecule. (2 words)

12. Most eukaryotic mRNA codes for a single polypeptide and is \_\_\_\_\_.

18. What two complementary strands of DNA spontaneously do to form an intact duplex.

14. Thymidylate is a nucleotide found primarily in \_\_\_\_\_ acids.

15. A common protein domain found in proteins that bind ATP. (3 words)

16. A major structural component of the protein synthetic machinery of cells.

18. Covalent bonds that link the individual nucleotide residues in DNA and RNA.

19. Structure containing polypurine tracts and mirror repeats; forms a triple helix.

23. Left-handed double-helical structure.

24. Right-handed, Watson-Crick double helix.

25. Short polymers of nucleotides (50 or less), often used as complementary DNA "probes" for hybridization techniques.

26. AACCTTTTCCAA  
TTGGAAAAGGTT (2 words)

27. DNA duplex formed from DNA of different species.

28. Non-Watson-Crick, or \_\_\_\_\_ pairing; allows formation of triplex DNA strands.