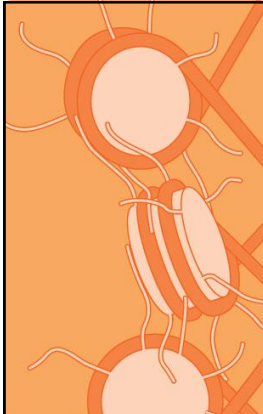


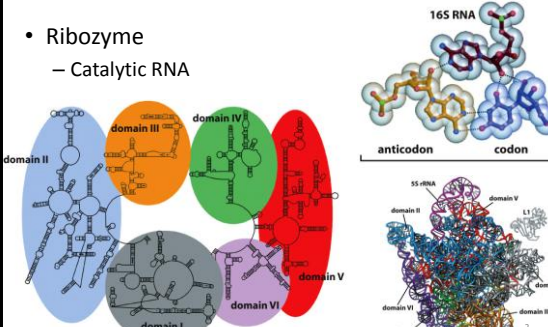
Chapter 6

How Cells Read the Genome



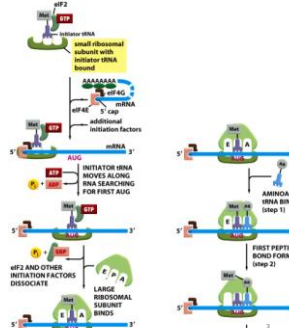
The Ribosome Is a Ribozyme

- Ribozyme
 - Catalytic RNA



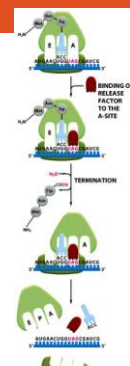
Nucleotide Sequences in mRNA Signal Where to Start Protein Synthesis

- Initiator tRNA
 - Methionine
- Eukaryotic loading
 - Eucaryotic initiation factors (eIF's)
 - Consensus sequence
 - 5'-ACCAUGG-3'
 - "leaky scanning"
 - Changes signal sequence



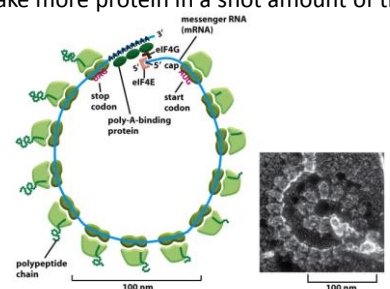
Stop Codons Mark the End of Translation

- UAA, UAG, UGA
 - No tRNA
- Release factors
 - Bind to A site
 - Adds water in place of aa
 - Frees carboxyl end from tRNA



Proteins Are Made on Polyribosomes

- Make more protein in a shot amount of time



There Are Minor Variations in the Standard Genetic Code

- Different species & Organelles
- 21st aa selenocysteine
 - Selenium
 - UGA codon
 - Stem loop causes recoding event
- Translational frameshifting
 - Retroviruses
 - Caspid & reverse transcriptase

