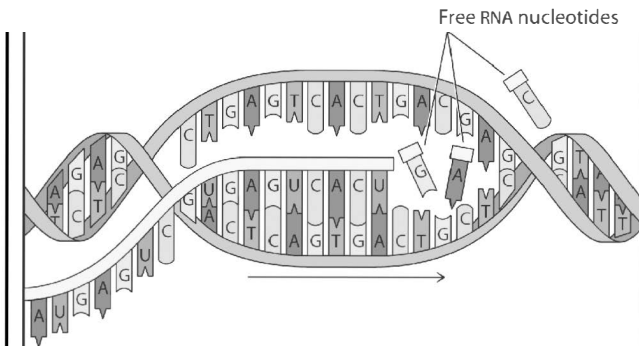
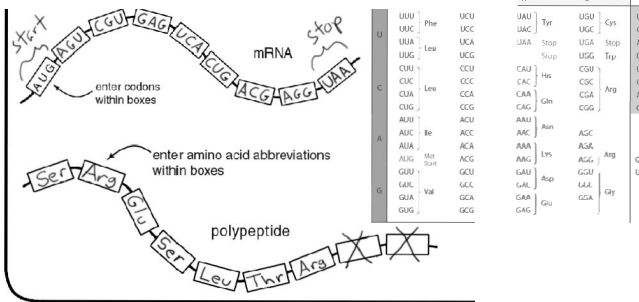


Conceptual Biology

Chapter 7: Genetic Technologies Transcription to Translation

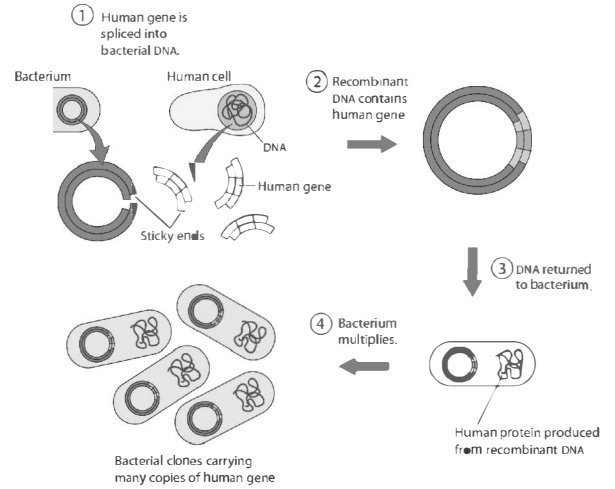


Shown above is the transcription of a small strand of mRNA from an unraveled portion of DNA. Use the genetic code shown below to figure out the polypeptide chain that this strand of mRNA will form. Assume that there are sufficient free RNA nucleotides available so that the mRNA strand will continue to grow until it includes the stop codon



Conceptual Biology

Chapter 7: Genetic Technologies Recombinant DNA



1. What kind of enzyme is used to create slices of DNA with sticky ends?

Restriction enzymes

2. What creates this kind of enzyme and why?

Bacteria and virus have these enzymes for self-defense against invading nucleic acids.

3. When this enzyme attacks DNA, what sort of DNA sequences result in sticky ends?

(Give an example.) **Typically the restriction enzymes attack palindromic sequences (can be read in both directions) such as: G A A T T C C T T A A G**

4. Why insert human genes into bacteria?
So that the bacteria can multiply exponentially and produce large quantities of the protein the gene codes for.

5. Write a definition for the phrase "gene cloning."

The transplantation of a sequence of DNA from one organism into another.