

CH 114 DNA Practice

Original Strand:      5'      C A T A T G G G C C G G A T G A A G A G C      3'

- 1) What is the sequence of the daughter or template strand formed from the original strand of DNA?
  
- 2) What is the sequence of mRNA formed from the original strand of DNA?
  
- 3) How many amino acids are coded for if the original strand contains no start or stop codons?
  
- 4) What is the sequence of amino acids coded for by this DNA?
  
- 5) If in a different strand of DNA a mutation occurred that changed the original sequence of base pairs. What, if any, changes would result in the amino acid sequence for each of the mutations listed below? Briefly explain each answer. All codons are written with the 5' end on the left and the 3' end on the right.
  - a) TTA became TTC
  
  - b) AGA became CGA
  
  - c) AAA became AAC

Use the developed gel to answer the following questions. As a result of years of war and conflict in a South American country, many children have been separated from their families. An attempt is now being made to return the children to their families using DNA profiles.

- 6) Are either children (labeled Child 1 and Child 2) a genetic match to Julio and Maria? Explain your answer citing specific allele matches from their DNA profiles.
- 7) Are either children (labeled Child 1 and Child 2) a genetic match to Ernesto and Eva? Explain your answer citing specific allele matches from their DNA profiles.