Mutations Worksheet KEY

Original DNA: TACACCTTGGGCGACGACT
Original mRNA: A U G U G G A A C C G C U G C U G A

Met-Trp-Asn-Arg-Cys-STOP Original Amino Acid Sequence:

Mutated mRNA #1: AUGUAGAACCGCUGCUGA

Mutated AA Sequence: Met-STOP-Asn-Arg-Cys-STOP

Likely Effects: Yes, altering the function of the protein.

Mutation Type: point nonsense mutation

Mutated mRNA #2: A U G C U G G A A C C G C U G C U G A

Mutated AA Sequence: Met-Leu-Glu-Pro-Leu-Leu
Likely Effects: Yes, creating a mutant protein. Mutation Type: frameshift insertion mutation

Mutated mRNA #3: A U G U G G A A U C G C U G C U G A Mutated AA Sequence: Met-Trp-Asn-Arg-Cys-STOP

Likely Effects: none

Mutation Type: silent mutation

Mutated mRNA #4: A U G U G G A A C C G C U G A U G A Mutated AA Sequence: Met-Trp-Asn-Arg-STOP-STOP

Likely Effects: Yes, prematurely stopping the formation of the protein so it won't be made.

Mutation Type: point nonsense mutation

Mutated mRNA #5: A U G U G G A A C C C U G C U G A

Mutated AA Sequence: Met-Trp-Asn-Pro-Ala-Likely Effects: Yes, creating a mutant protein Mutation Type: frameshift deletion mutation