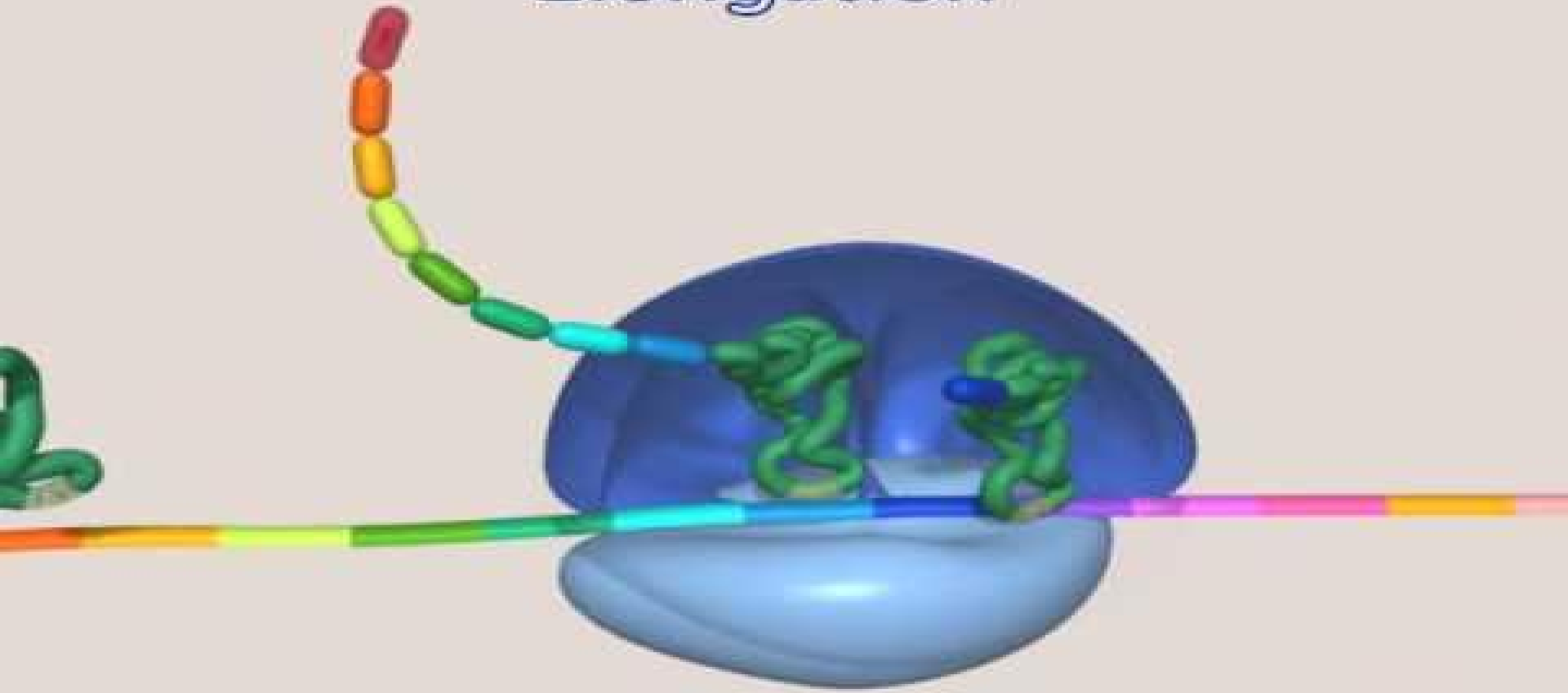
Warm-Up

Identify the 3 types of RNA and describe their functions.

Objective

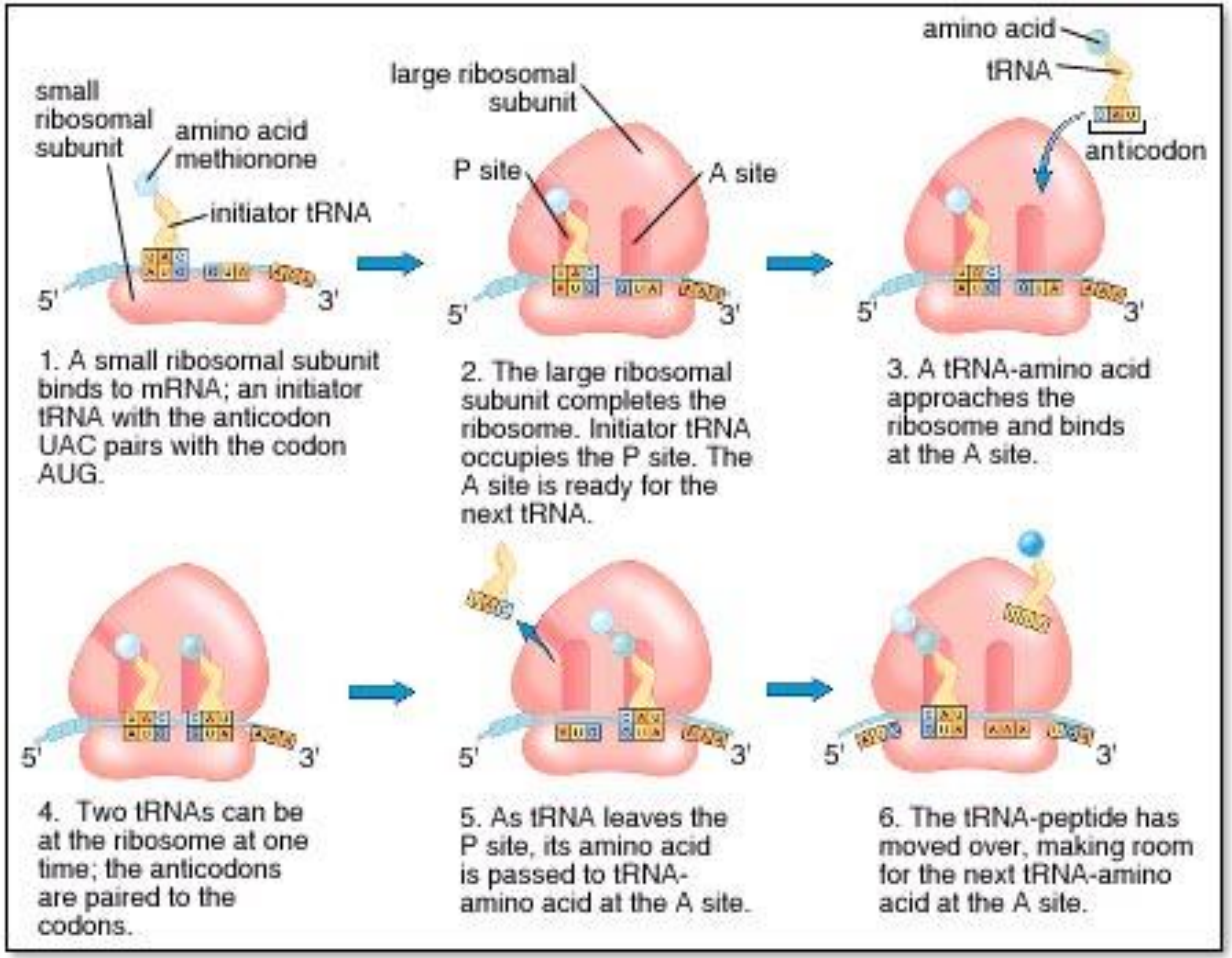
Describe the steps of translation

Elongation



3 stages

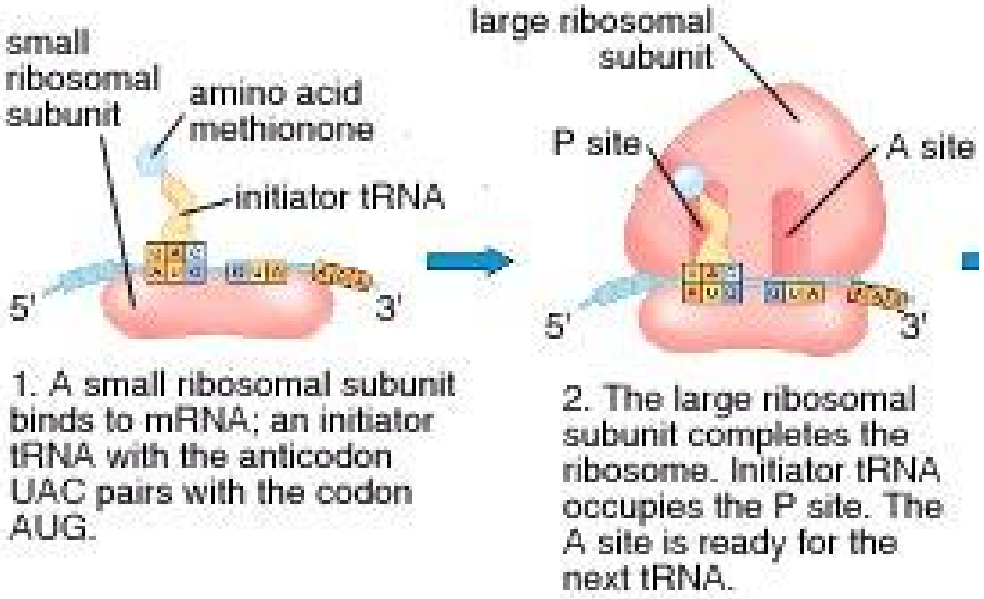
- Initiation
- Elongation
- Termination



Step 1- Initiation

The ribosomal subunits, the mRNA, and the tRNA carrying methionine bind together.

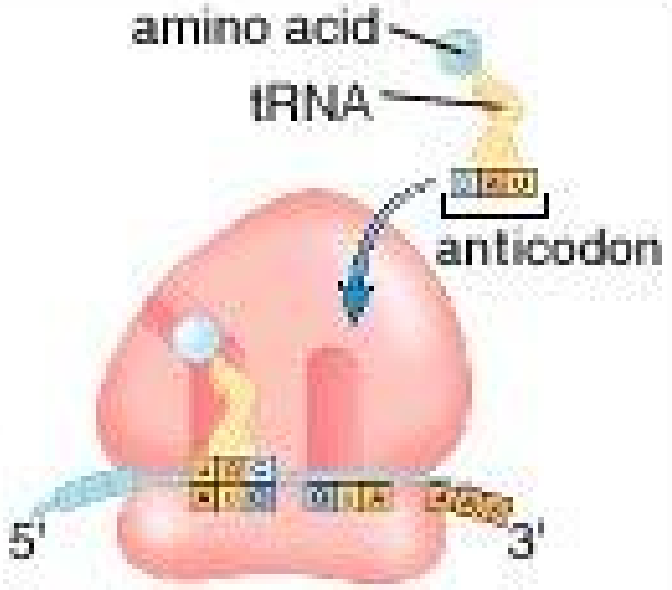
Making the Initiation complex.



- The mRNA start codon methionine (AUG), signals the beginning of the protein chain.
- It is located in the Peptidyl (P) site of the ribosome where the tRNA carrying methionine can bind to the start codon.

Step 2- Elongation

The tRNA carrying the amino acid specified by the codon in the Aminoacyl (A) site arrives.

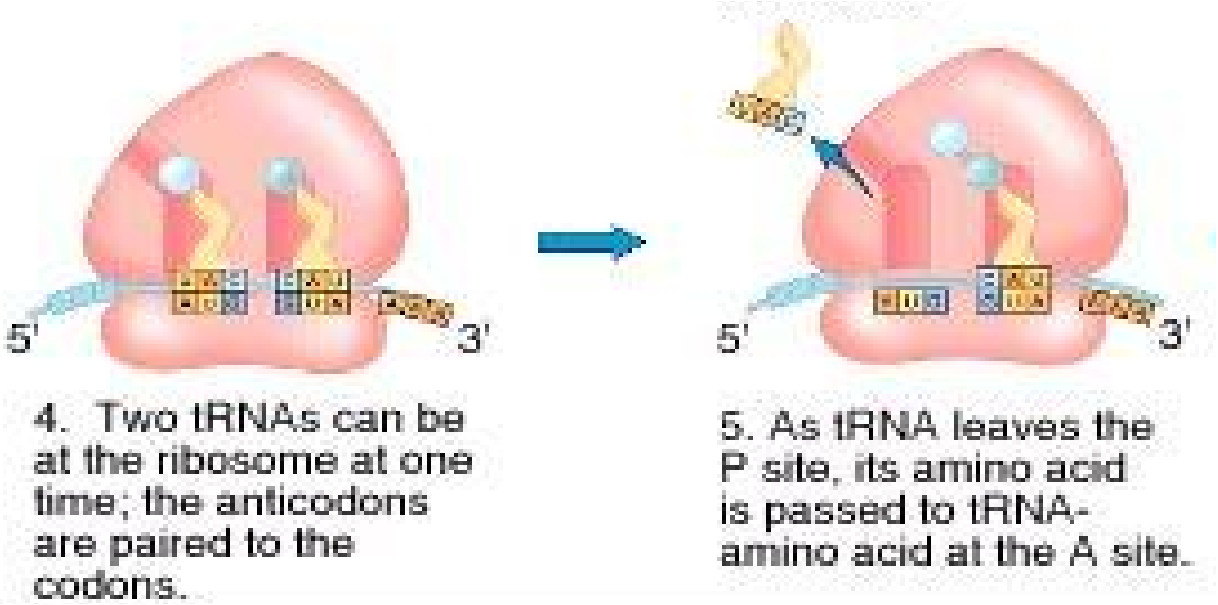


Step 3

A **peptide bond** forms between adjacent amino acids.

Step 4

The tRNA in the P site detaches and leaves its amino acid behind.

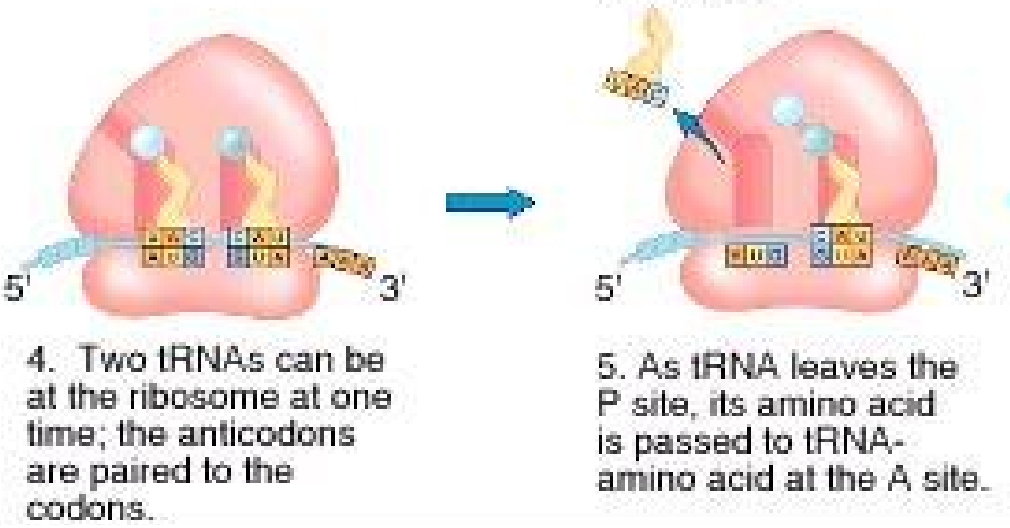


4. Two tRNAs can be at the ribosome at one time; the anticodons are paired to the codons.

5. As tRNA leaves the P site, its amino acid is passed to tRNA-amino acid at the A site.

Step 5

- The tRNA in the Aminoacyl (A) site moves to the P site
- The tRNA carrying the amino acid specified by the codon in the A site arrives.



Step 6

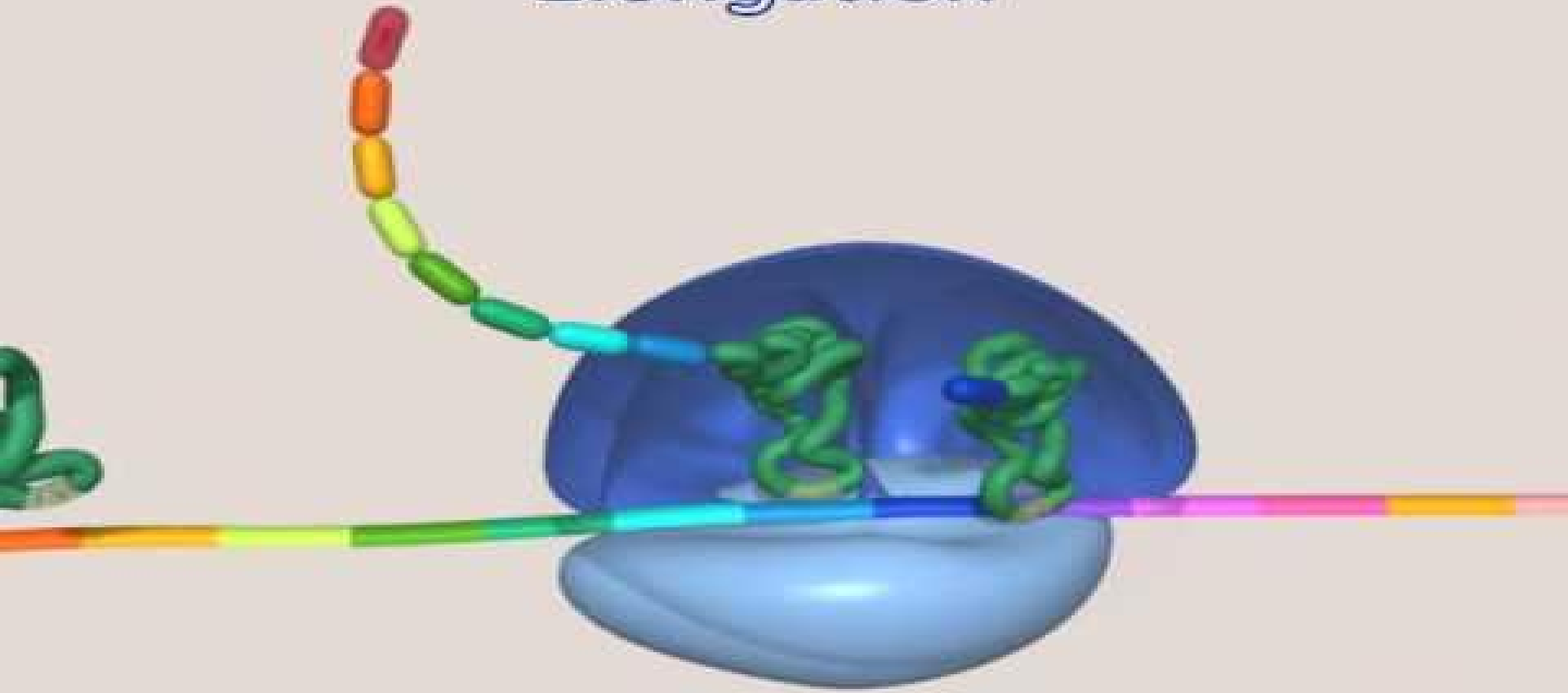
- A peptide bond is formed.
- The tRNA in the P site detaches and leaves its amino acid behind.

6. The tRNA-peptide has moved over, making room for the next tRNA-amino acid at the A site.

Step 7- Termination

- The process is repeated until a stop codon is reached.
- A release factor enters the A site.
- The ribosome complex leaves.
- The newly made protein is released.

Elongation



Homework

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Classroom Assignment

https://www.youtube.com/watch?v=5bLEDd-PSTQ