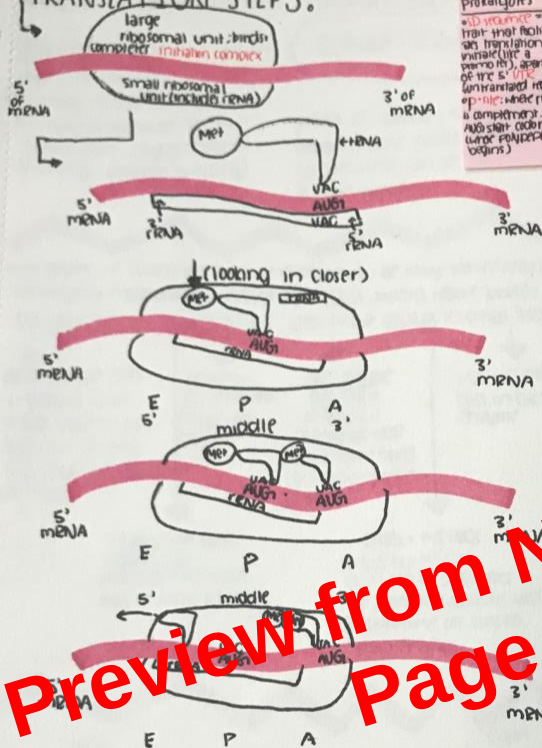


TRANSLATION STEPS:



prokaryotes VS eukaryotes

- In prokaryotes, translation begins while transcription is still going on (coupled transcription-translation).
- In eukaryotes, translation begins after transcription is complete (mRNA is processed before translation).

SIDE NOTES

- rRNA recognizes specific mRNA sequence, made 3' to 5' since mRNA's 5' to 3' base mRNA recognition sequence which is complementary to rRNA

- beginning of transcription (rRNA binding to mRNA's start codon)
- initiation complex = small ribosome subunit + mRNA + meth. RNA

- both catalytic rRNA (in large ribosome subunit) & recognition sequence rRNA (in small ribosome subunit) present

- 3 sites in ribosome: E, P, & A. 1st meth. starts @ P

- next tRNA load E, P, A

- catalytic rRNA binds AA from P site to AA in A site (each as an enzyme)
- tRNA moves to E then exits ribosome
- ribosome moves down mRNA in 3' direction & process continues

- after releasing polypeptide + tRNA (after release factors bind stop codon & lead to termination of translation), ribosome dissociates into indiv. subunits

* In sum, 3 steps are initiation (ribosome mRNA + tRNA) elongation (building up polypep.) termination (everything parts ways)

* MUTATION VOCAB *

- somatic mutations can cause cancer but aren't heritable VS.
- germline mutations in gametogenic cells are heritable
- silent mutations (ex. changing 1 stop codon to another stop codon): no effect, very common VS.
- mutations causing loss of func. (ex. 508 mutation in CFTR), something stops working, usually recessive VS.
- gain of func.: something new happens, often dominant
- conditional/dominant mutation: affects phenotype only under certain environmental conditions
- reversion mutation: when prev. mutation is changed back to wildtype/wt
- point mutations: impact a single base (SNP aka single nucleotide polymorphism)
 - transitions: point mutation of purine → purine (ex. A to G) or pyrimidine → pyrimidine (ex. T to C)
 - transversions: purine → pyrimidine (ex. A to G) or pyrimidine → purine (T to A), less common than transitions
- missense mutations: cause immune acid a codon codes for (ex. UAA → UCA = leu → ser)
- nonsense mutations: insert stop codon

