RNAs

Thymine — $^1CH_3$ + Uracil

Why does RNA have Uracil & DNA does not?

Cytosine $\rightleftharpoons$ Uracil

↳ can undergo spontaneous deamination to uracil. → changes in structure.

Hence, genetic code changes.

⟹ Repair system cannot differentiate between altered C and preexisting U

Double helical RNA!

loop-y structures

Wobble base pairs

G:U base pair. → weak bonding, because of (str. sim)!

↳ can be found only when most of the bps are joined → not found in pure G-U strand.

Loops → bulge
      → Internal loop
      → Hairpin loop

① mRNA

- regulation of nuclear export
- protection against Degradation by exonucleases
- promotion of Translation.

✱ Modifications

- 5' end (before Transcription) → capping with
  (because it emerges first)   7'methyl guanosine.
  (nucleus)   ↳ cotranscriptionally

- 3' end → tailing with poly adenylate residues
  (nucleus)

- Splicing → removal of introns & joining of exons
  (nucleus)

✱ Otherwise RNAase shortens it, and it also
helps shuffling proteins to bind to RNA cap/tail
5'cap binds ribosome → helps in Translation.

Riboswitch

bind small molecule ligand → and regulate
expression of downstream gene.
→ cis → part of the same molecule (mRNA)

helps in translational shutdown (quickfix, immediate
effect on existing mRNA)

microRNA acts on RNA & prevents Translation
and
__lnc RNA__ regulates gene expression as well
as Translation. can also mediate

mRNA stability.

RNAase-P → RNA acting as ribonuclease