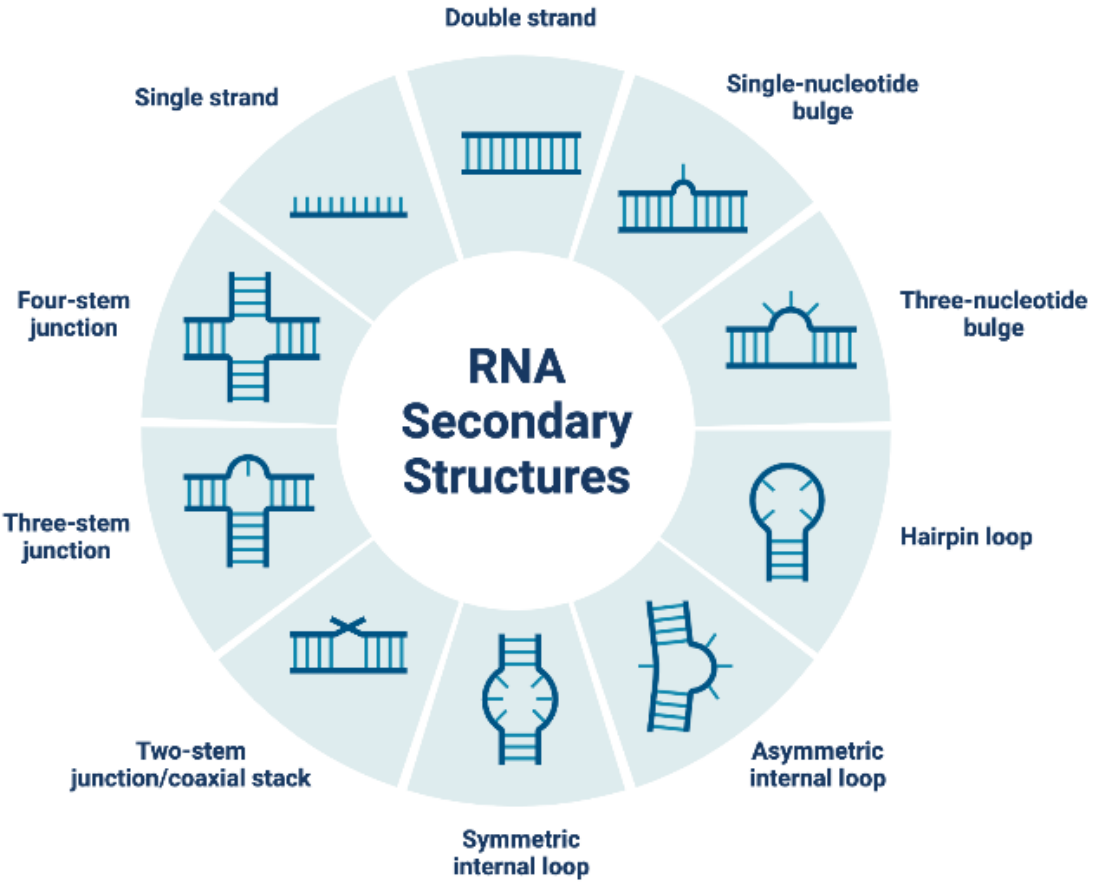
RNA Secondary Structures
Double strand
Single-nucleotide bulge
Three-nucleotide bulge
Hairpin loop
Asymmetric internal loop
Symmetric internal loop
Two-stem junction/coaxial stack
Three-stem junction
Four-stem junction
Single strand

RNA secondary structure refers to the specific folding pattern formed by base pairing within a single RNA strand. These structures are crucial for RNA's biological functions, including protein synthesis, gene regulation, and catalysis.

Elements of RNA Secondary Structure

Stems: Double-stranded regions formed by complementary base pairing (A-U and G-C).

Loops: Unpaired regions that form when the strand folds back on itself.

Hairpin loops: Common in tRNA and other functional RNAs.

Internal loops and bulges: Occur when base pairing is interrupted.

Multibranch loops: Junctions where multiple stems converge.

Pseudoknots: Complex structures formed when bases in a loop pair with bases outside the loop.

These structures are stabilized by hydrogen bonds and contribute to the molecule's stability and function