

# Tertiary interaction motifs in RNA structures

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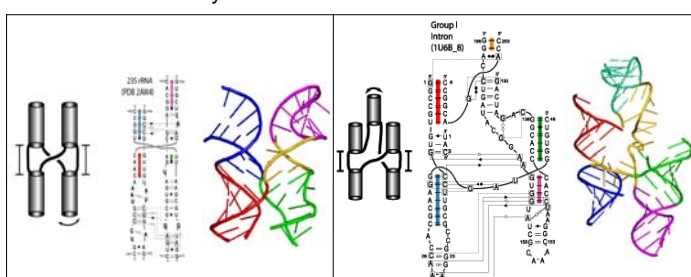
Email: sj801@nyu.edu; web: http://monod.biomath.nyu.edu/

## Introduction

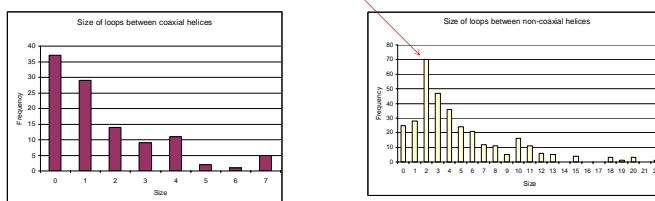
RNA molecules can adopt well-defined three-dimensional structures of high complexity to carry out specific functions in a cell. However, even the most complicated RNA structures are composed of basic structural elements such as junctions. RNA junction is the hub of multiple helices involving various functional roles, i.e., self-cleavage, binding domain of protein. Because RNA junctions define main architectural features in RNAs, it is important to better understand how these elements are structured.

## Objective

- Classify RNA junctions into a families
- Perform analysis over 2D & 3D RNA structure.
- Discover new tertiary RNA motifs and interactions.

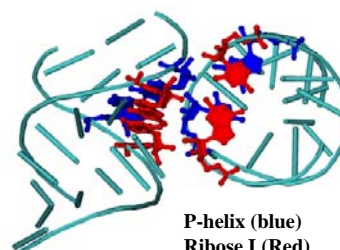


## Distribution of sequence length between helices



Short sequence size of a loop between helices shows high probability of forming coaxial stacks. Interestingly, high probability of non-coaxial helices were observed in a loop size of two.

## Novel helix-helix motifs containing G/U receptors and ribose-base interaction arrange helices in perpendicular conformation.



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