NUPACK: a web-based tool for the analysis and design of nucleic acid systems

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NUPACK is a growing software suite for the analysis and design of nucleic acid systems. Current functionality includes:

- Thermodynamic analysis of dilute solutions (e.g., a test tube) of interacting nucleic acid strands in the absence of pseudoknots [1].
- Thermodynamic analysis of non-interacting strands with the possibility of certain physically-relevant pseudoknots [2, 3].
- Efficient hierarchical sequence design based on both positive and negative thermodynamic design paradigms (i.e., affinity and specificity for a target secondary structure) [4].

To enable easy access to biologists and molecular engineers worldwide, we have developed a user-friendly interactive web interface (`www.nupack.org`) that dramatically accelerates the rate at which hypotheses and designs can be tested computationally. Our poster will demonstrate the unique capabilities and ease of use of the NUPACK server.

References

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