

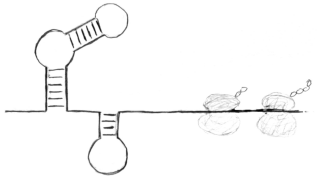
Predicting RNA-RNA Interactions - A Kinetic Approach

Maria Waldl

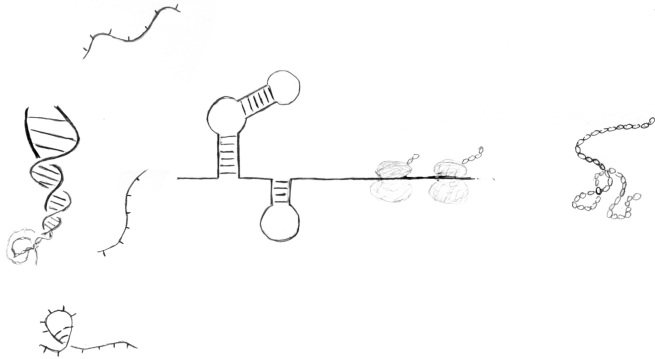
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Bled, February 16th, 2018

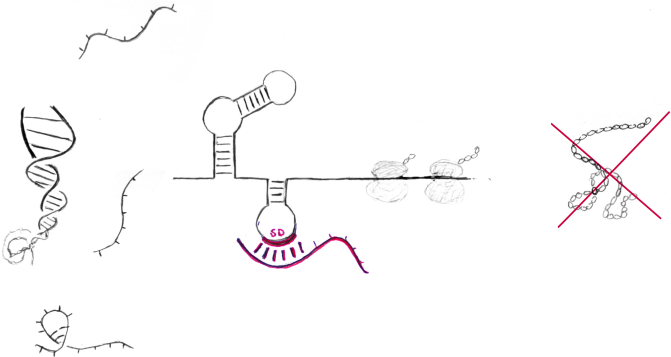
Non-coding RNA as Regulatory Elements



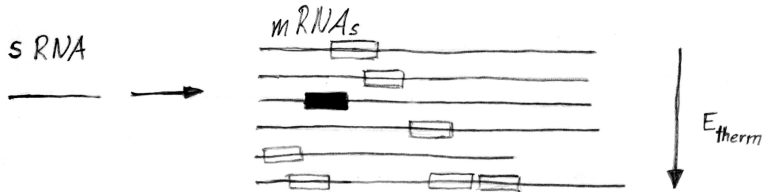
Non-coding RNA as Regulatory Elements



Non-coding RNA as Regulatory Elements

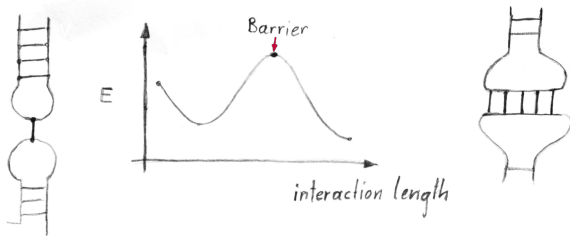


Thermodynamic Methods - Target Candidates



Other important factors? → Kinetics

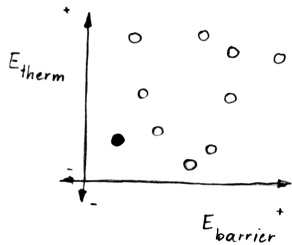
Dynamics of Structure Formation - A Kinetic View



- + elongating interaction
- breaking intramolecular structure

Features for describing kinetic process

Energy Barrier



A Simplified Model

- ▶ fixed base pair set
- ▶ direct path
- ▶ dynamic programming



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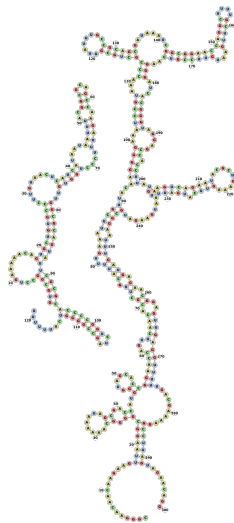


A Simplified Model

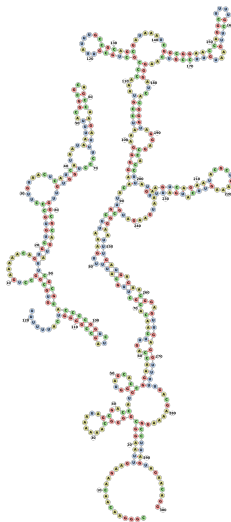
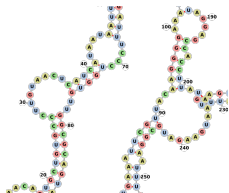
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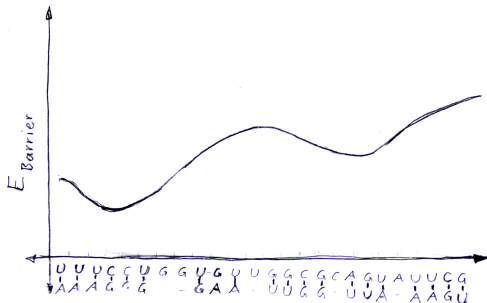
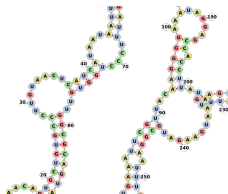
Example: ArcZ - rpoS



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Example: ArcZ - rpoS



Future Work

- ▶ study general principles of RNA-RNA interactions
- ▶ extend feature sets
- ▶ combine features for target screens

Acknowledgments

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