

RNA logic gates

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April 2, 2017

1 Introduction

Logic circuits using RNA has many interesting applications in diagnostics and treatment. An example is cancer detection, where miRNA's can be used as biomarkers [1]. These biomarkers can be used as inputs for logic circuits, which can be designed to activate FRET signals or enzymatic pathways when combinations of biomarkers are detected.



Figure 1: Example of logic circuit

DNA logic circuits have been studied extensively [2].

References

- [1] Yong Peng and Carlo M Croce. The role of MicroRNAs in human cancer. *Signal Transduction and Targeted Therapy*, 1:15004, jan 2016.
- [2] David Yu Zhang and Georg Seelig. Dynamic DNA nanotechnology using strand-displacement reactions. *Nature chemistry*, 3(2):103–113, 2011.