

Micro 201

Dove Lecture 5, Class 22: Small RNAs

April 18th, 2019

Overview

This class will focus on small regulatory RNAs in bacteria. We will discuss the variety of mechanisms by which small RNAs can exert regulatory effects and consider how small RNAs and their regulatory targets can be identified. This will be followed by a discussion of a classic paper from the Storz lab detailing the activity of *oxyS*—a trans-encoded small RNA that regulates the translation of target mRNAs in *E. coli*.

Paper for Discussion

1. Altuvia S, Weinstein-Fischer D, Zhang A, Postow L, Storz G. (1997) A small, stable RNA induced by oxidative stress: role as a pleiotropic regulator and antimutator. *Cell* 90, 45-53.

Essential Reading

2. Sharma CM, Vogel J. (2009) Experimental approaches for the discovery and characterization of regulatory small RNA. *Curr Opin Microbiol* 12, 536-546.

General Reviews

3. Storz G, Vogel J, Wassarman KM. (2011) Regulation by small RNAs in bacteria: Expanding frontiers. *Mol Cell* 43, 880-891.

4. Hor J, Vogel J. (2017) Global snapshots of bacterial RNA networks. *EMBO J* 36, 245-247.