

RNAa papers

News feature: “Hitting the on switch,” Ericka Check,
Nature **448**: 855-858 (2007)

Research article: “Small dsRNAs induce transcriptional
activation in human cells,” Long-Cheng Li et al., *PNAS*
103:17337-17342 (2006)

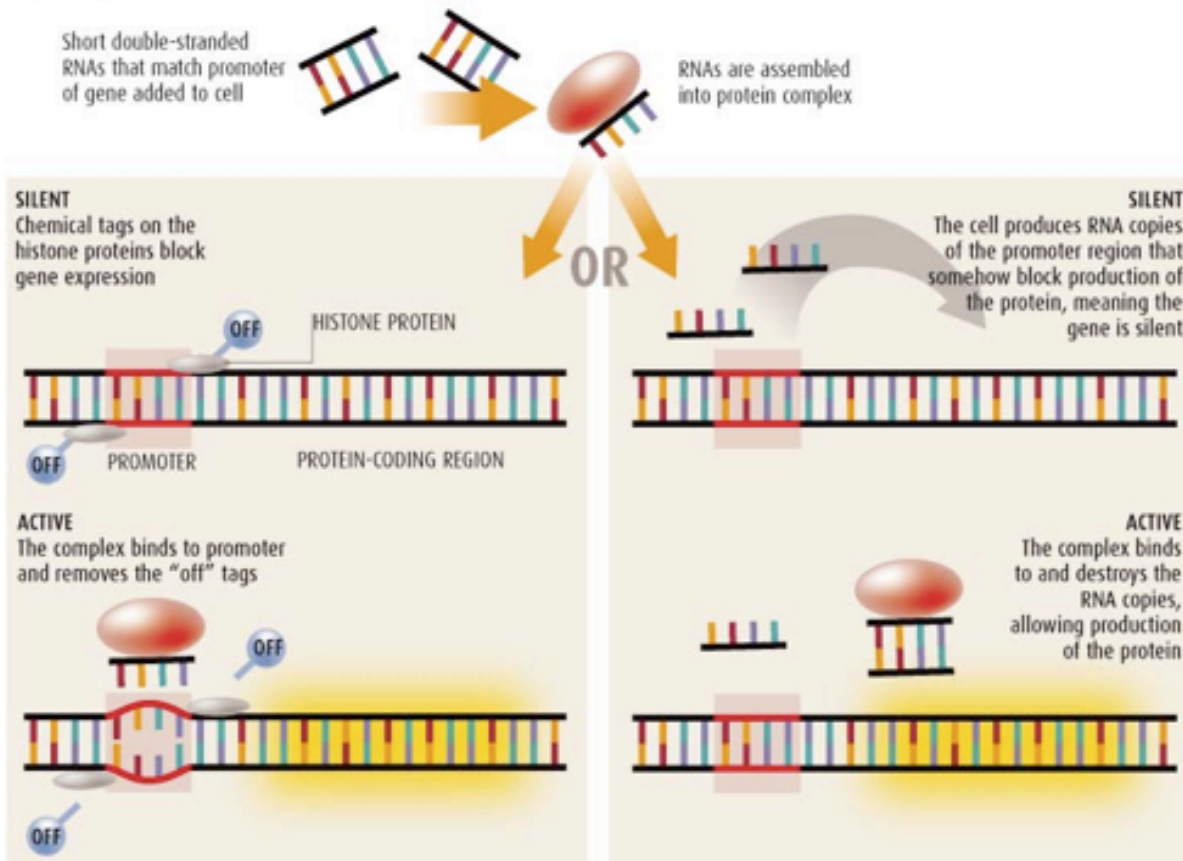
Up-to-date Context (2009)

Welcome to the Li Lab!

Our lab studies the small RNA mediated gene activation (RNAa) mechanism and tries to understand whether RNAa is a naturally occurring phenomenon, if yes, whether it is involved in diseases especially cancer. We are also testing RNAa as cancer therapeutics and as a tool for stem cell reprogramming.

TWO WAYS TO TURN ON A GENE

Genes can be activated by targeting the promoter regions in front of them that control their activity. There are two ways it might work



To date, ~60 citations

- 1. Title: [Repressing the repressor A new mode of MYC action in lymphomagenesis](#)
Author(s): Sander S, Bullinger L, Wirth T
Source: **CELL CYCLE** Volume: 8 Issue: 4 Pages: 556-559 Published: **FEB 15 2009**
Times Cited: 0
[Get this – MIT](#)  [S·F·X](#)
- 2. Title: [RNA-directed DNA methylation induces transcriptional activation in plants](#)
Author(s): Shibuya K, Fukushima S, Takatsuji H
Source: **PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA** Volume: 106 Issue: 5 Pages: 1660-1665
Published: **FEB 3 2009**
Times Cited: 0
[Get this – MIT](#)  [S·F·X](#)
- 3. Title: [Up-regulation of E-cadherin by small activating RNA inhibits cell invasion and migration in 5637 human bladder cancer cells](#)
Author(s): Mao QQ, Li YB, Zheng XY, et al.
Source: **BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS** Volume: 375 Issue: 4 Pages: 566-570 Published: **OCT 31 2008**
Times Cited: 0
[Get this – MIT](#)  [S·F·X](#)
- 4. Title: [Regulating the regulators](#)
Author(s): Viegas SC, Arraiano CM
Source: **RNA BIOLOGY** Volume: 5 Issue: 4 Pages: 230-243 Published: **OCT-DEC 2008**
Times Cited: 0
[Get this – MIT](#)  [S·F·X](#)
- 5. Title: [Bidirectional Transcription Directs Both Transcriptional Gene Activation and Suppression in Human Cells](#)
Author(s): Morris KV, Santoso S, Turner AM, et al.
Source: **PLOS GENETICS** Volume: 4 Issue: 11 Article Number: e1000258 Published: **NOV 2008**
Times Cited: 1
[Get this – MIT](#)  [S·F·X](#)

Considering the news article

- “A three-year saga of frustration and exhilaration”
- Terminology + concepts:
 - miRNAs vs. siRNAs
 - Tumor suppressors
 - Phenomenon vs. mechanism
 - Natural phenomenon vs. lab artifact
 - Direct vs. indirect effect “inhibition in disguise”
 - mRNA vs. promoter regulation

Research article: the writing

- Condensed introduction
 - How is structure + content effective?
 - You will write one for your Module 2 report.
- How does abstract differ from introduction?
- Results vs. Discussion
 - Results: numbers, e.g., fold-change in transcript or protein (*some* basic conclusions drawn)
 - Discussion: summary, context, and implications, e.g., compare + contrast RNAi and RNAa, speculate about RNAa mechanism, generality

Figure-by-figure presentations