

Propositions

In part fulfillment of the thesis

'Role of Pleiohomeotic in Targeted Gene Silencing by Polycomb Group Proteins'
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1. PHO can contribute to PRE-mediated silencing by direct recruitment of a PC complex to repress transcription. (*This thesis*)
2. Deciphering the sequence requirements for PRE function is critical to understanding how DNA elements can direct cellular memory during development. (*This thesis*)
3. PHO sites and PBEs constitute an integrated platform for highly cooperative DNA binding by PHO and PCC. (*This thesis*)
4. Like enhancers, PREs are complex and their activity involves the combined activity of distinct recognition elements and their cognate factors. (*This thesis*)
5. The PHO/PCC/PRE nucleoprotein complex shares several architectural features with the nucleosome. (*This thesis*)
6. It is worth noting that the term "code," as commonly understood, involves a translation machine. The Morse code, a computer code, and the genetic code each have a translation machine in the form of a telegraph, a program, or a ribosome. However, the binding of HP-1 to methylated H3 K9 in heterochromatin does not constitute a translation machine, because "reading" is synonymous to simply "binding," with only one bound state, like a telegraph key that can only read a single dot. Multiple inputs or outputs are needed for a nontrivial code. These must be distinct, not simply cumulative: one Morse code dot reads "e" and two read "i," not "e" and "ee."
On defining the histone code in "Histone modifications: Combinatorial complexity or cumulative simplicity?" by Steven Henikoff, PNAS, 2005, 102: 5308-5309.
7. Nature never decided to be interesting, yet we scientists find it fascinating!
By Alan Wolffe.
8. Discovery consists of seeing what everybody has seen and thinking what nobody has thought.
By Albert von Szent-Gyorgy.
9. Designing and building synthetic genomes that function properly will be a true test of our understanding of cellular molecular biology.
Taken from "The New Synthesis" by Clyde A. Hutchinson III, Hamilton O. Smith and J. Craig Venter, The Scientist, 2006, Vol. 20, No. 1.
10. Despite the lack of evidence that peer review works, most scientists (by nature a skeptical lot) appear to believe in peer review. It's something that's held 'absolutely sacred' in a field where people rarely accept anything with 'blind faith'. It's very unscientific, really.
Taken from "Is peer review broken" by Richard Smith, The Scientist, 2006, Vol. 20, No. 2.
11. The test for whether or not you can hold a job should not be the arrangements of your chromosomes.
By Bella Abzug