



Figure 17. RNA Directed Induction of Repressed Chromatin States

Different forms of silent chromatin have different primary signals, but many are likely to be RNA transcript-related (from aberrant transcripts, to *Xist* RNA, to dsRNAs), depending on the nature of the underlying DNA sequence. This triggers the establishment of a collection of chromatin changes, including a combination of histone modifications (H3K9, H3K27, and H4K20 methylation), the binding of repressive proteins or complexes (e.g., PC or HP1) to the chromatin, DNA methylation, and the presence of histone variants (e.g., macroH2A on the inactive X chromosome). Facultative or constitutive heterochromatin shows visible clustering in the nucleus. Euchromatic repression cannot be determined by nuclear morphology patterns.