

What does "epigenetics" mean?

•Literally, epigenetics means above, or on top of, genetics.
•Usually this means information coded beyond the DNA sequence, such as in covalent modifications to the DNA or modifications to the chromatin structure.



Epigenetics Epigenetic modifications of DNA and chromatin affect the activity of genes and transposons. Epigenetic controls affect processes as diverse as time-of-flowering, parent-of-origin imprinting, paramutation and transposon silencing. Whole-genome studies of epigenetic marks have revealed that they are unexpectedly pervasive, as well as the critical role of small interfering RNAs in maintaining epigenetic states. This lecture has an accompanying slide set (Methods for epigenetic analyses) describing the methods used for analyses of epigenetic genome modifications. The additional 24 slides describe bisulfate sequencing, chromatin immunoprecipitation, DNA adenine methylation (DamID), and conventional and pyrosequencing methods used in epigenetic studies. *First posted January 29, 2010, revised March 31, 2011.*

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