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## Sequence-specific drugs

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The mechanism by which **heterochromatin** mediates the epigenetic gene-silencing events that cause position effect variation (PEV) is not understood. Two articles in the November **Molecular Cell** from Janssen and colleagues explore the role of repetitive heterochromatin sequences in PEV (*Mol Cell* 2000, **6**:999-1011 and 1013-1024). In the first article, Janssen *et al.* describe the development of satellite-specific DNA minor groove binding drugs containing pyrrole and imidazole amino acids (**polyamides**). In the accompanying paper they present the dramatic effects observed when these drugs are fed to *Drosophila*. One of the polyamide drugs that targets AT-rich satellites suppressed PEV in *white-mottled* flies (a gain-of-function phenotype). However, another of the drugs, which binds to GAGAA satellite sequences, induced homeotic transformations in *brown-dominant* flies (a loss-of-function phenotype). The authors suggest that both phenotypes can be explained by the ability of these drugs to open up chromatin structures. These drugs are powerful tools for investigating the role of non-coding sequences and heterochromatin in mysterious epigenetic phenomena.

## References

1. Unfolding the mysteries of heterochromatin.
2. *Molecular Cell*, [<http://www.molecule.org/>]
3. Design of a G.C-specific DNA minor groove-binding peptide.