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Loss of imprinting in colorectal cancer

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Loss of imprinting (LOI) has been implicated in the predisposition to certain colorectal cancers. Insulin-like growth factor II (*IGF2*) is an imprinted gene in which the maternal allele is normally silenced. In the January 16 Proceedings of the National Academy of Science, Nakagawa *et al*. describe the development of a fluorescence-based primer extension assay (SnuPE) to examine whether LOI is associated with allele-specific methylation in colorectal cancer samples (*Proc Natl Acad Sci USA* 2001, **98:**591-596). They demonstrate that LOI is not a consequence of microsatellite instability or a deficiency in the process of mismatch repair. A link is established between LOI and methylation of both alleles of *IGF2* at CpG sites, which are important for binding of the CTCF protein. The authors also observed LOI in matched normal tissues in some patients, suggesting that LOI events may precede tumour formation. These results establish a role for methylation and chromatin in colon cancer epigenetics.

References

1. Hypomethylation distinguishes genes of some human cancers from their normal counterparts.

2. *Proceedings of the National Academy of Science*, [http://www.pnas.org]

3. Single nucleotide primer extension: quantitative range, variability, and multiplex analysis.