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Cow clones

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X-chromosome inactivation, the largest epigenetic event known, involves random silencing of one of the two X chromosomes in the cells of female mammals. In an Advanced Early Publication in Nature Genetics, Xue *et al.* report defects in X inactivation in cells from cloned bovine embryos (*Nature Genetics,* 18 May 2002, DOI:10.1038/ng900). They looked at the allele-specific expression of the X-linked monoamine oxidase type A (*MAOA*) gene and at the expression of *Xist* and other X-linked genes in cloned XX calves. They found evidence for aberrant X-chromosome inactivation in deceased clones, and incomplete nuclear reprogramming. Xue *et al.* show that X-chromosome inactivation is paternally imprinted in extra-embryonic tissues of normal cows, but is random in the placentae of deceased clones. The defective patterns of X inactivation seen in cloned cows are in contrast to the normal X inactivation events reported in cloned mice.

References

1. X-chromosome inactivation in mammals.

2. *Nature Genetics*, [http://www.nature.com/ng/]

3. X-Chromosome inactivation in cloned mouse embryos.