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*Tsix*tricks

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X-chromosome inactivation (XCI) is controlled by expression of the Tsix gene and its regulation of *Xist* mRNA accumulation. Deleting one copy of *Tsix* results in skewed XCI towards the mutated X chromosome in female soma. In an Advanced Online Publication in Nature Genetics, Jeannie Lee reports the generation of homozygous *Tsix*-null mice by breeding heterozygote animals (*Nature Genetics,* 29 July 2002, doi:10.1038/ng939). The frequency of homozygote offspring was 20-40% of that expected. Furthermore, homozygous mutation caused a significant sex-ratio distortion favouring male births. Homozygous null females had extremely low fertility and were often sterile. The sex-ratio distortion seems to be linked to female-specific defects in trophoblast and inner cell mass (ICM) growth. Lee generated hybrid mice with polymorphic X chromosomes to monitor XCI. She demonstrated that the loss of both copies of *Tsix*randomizes XCI. Lee proposes a "chaotic" choice model to explain these observations.

References

1. *Tsix*, a gene antisense to *Xist* at the X-inactivation centre.

2. Targeted mutagenesis of *Tsix* leads to nonrandom X inactivation.

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

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