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Human sex chromosome evolution: the Y rescued by the X.

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Eugénie Pessia, Marc Bailly-Bechet and Gabriel Marais have just published a paper in PNAS about the evolution of human sex chromosomes. The degeneration of the genes on the Y chromosome produces a dosage imbalance in males. A mechanism called X chromosome dosage compensation has evolved in several organisms to get a proper dosage in males. In mammals, the mechanism is believed to be complex as it includes the doubling of X expression in both sexes and the inactivation of one X in females. Pessia et al. provide new evidence about the doubling step, which is currently hotly debated. The doubling step only affects a subset of X-linked genes that are dosage-sensitive. This work has implications for the evolution of sex chromosomes and also for identifying genes underlying the X aneuploidy syndromes such as Klinefleter (XXY), Turner (X0) and Triple-XXX.

Read the article

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