highlights

Taming the centromere

In mammals, centromeres are the constrictions on the chromosome where the chromatids join and through which the chromosome is attached to the spindle during cell division. The structure and organization of centromeric regions are critical to chromosome function, but partly because of their unique evolutionary properties, their sequence characterization poses problems. A detailed analysis of the structure and assembly of the pericentromeric region on each human chromosome now provides a firm framework for resolving these areas. The exercise shows that most pericentromeric regions have undergone a complex series of changes during evolution, amounting to some 200 transposition events per million years of the estimated 40 million years of human evolution

articles

The structure and evolution of centromeric transition regions within the human genome

XINWEI SHE, JULIE E. HORVATH, ZHAOSHI JIANG, GE LIU, TERRENCE S. FUREY, LAURIE CHRIST, ROYDEN CLARK, TINA GRAVES, CASSY L. GULDEN, CAN ALKAN, JEFF A. BAILEY, CENK SAHINALP, MARIANO ROCCHI, DAVID HAUSSLER, RICHARD K. WILSON, WEBB MILLER, STUART SCHWARTZ & EVAN E. EICHLER Nature 430, 857–864 (2004); doi:10.1038/nature02806 | Summary | Full Text (HTML / PDF) |

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