

**P032** Gene conversion at a human sex-chromosomal translocation hotspot

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Translocation between the short arms of the human sex chromosomes transfers the sex-determining gene (*SRY*) between the X and Y, and is a major cause of sex reversal. Previous work has shown that translocation breakpoints in XX males and XY females cluster in at least two hotspots within the gametologous gene pair *PRKX* and *PRKY*. We hypothesized that gene conversion might also occur in these hotspots as a product of aborted translocation intermediates, and sought evidence of this by resequencing the X and Y copies of one of the hotspots in a panel of males from different populations. In 12 X chromosomes and 12 Y chromosomes we find evidence of a single conversion of the Y copy by the X, but seven conversions of the X by the Y. Assuming each patch of conversion reflects a single event, possible patch length ranges from 1bp to 270bp. None of the conversions observed immediately flank the 247bp segment of identity corresponding to the previously identified hotspot, suggesting a complex mechanism of branch migration and patch repair away from the site of initiation. This is the first observation of transfer of sequence information between the human sex chromosomes, outside the pseudoautosomal regions.