
Transposable elements (and genes) are under control in hybrids between *Drosophila* close species

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Résumé

Crosses between close species can lead to genomic disorders, often considered as the cause of hybrid incompatibility. In order to understand the first steps in hybrid incompatibility, we performed reciprocal crosses between two species of *Drosophila* (*D. mojavensis* and *D. arizonae*) that diverged less than 1 MYA. We sequenced ovarian mRNA from the parental strains and from hybrids obtained from reciprocal crosses, as well as ovarian piRNA from the reciprocal crosses. Our results show that the parental lines differ in their genes expression (~20% genes differentially expressed) but more importantly in the TEs expression (~40% TE differentially expressed). On the contrary, reciprocal hybrids presented mean levels of genes expression when compared to the parental lines. TE were also mainly regulated in hybrids with only few exceptions that were either higher expressed in hybrids than in the parental lines. The presence of piRNA with a pingpong signature is in agreement with this observation. Our results show that no global activation of TE is observed when crossing closed related *Drosophila* species, but instead, some specific elements are totally uncontrolled.

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