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Title: Interlocus Sexual Conflict as an Engine for Post-zygotic Isolation in *Drosophila melanogaster*

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Abstract: Speciation, one of the most important biological processes, is a central theme of evolutionary biology. It happens –at least in sexually reproducing organisms - as individuals of a population acquire barriers that fully or partially impede them from reproducing with individuals from other similar populations. Of the many evolutionary processes that create such reproductive barriers (RB), inter-locus sexual conflict (leSC) is put forward as an important one. leSC arises due to differential evolutionary interest of the two sexes in reproduction and results in rapid antagonistic coevolution of reproductive traits. This, as per verbal arguments and mathematical models, can lead to divergence in those traits and create RB in allopatric populations. This idea, however, remains controversial with little experimental support in its favour, especially from an experimental evolution perspective. Using replicate populations of laboratory adopted populations of *Drosophila melanogaster* selected for different levels of sexual conflict and known to show signs of pre-zygotic and post-mating pre-zygotic isolation, we investigated whether sexual conflict acts as a driving force for post-zygotic isolation or not. We do not find any compelling evidence of post-zygotic isolation in these populations. However, we noticed that in F2 generation, hybrids from the regime evolving under higher sexual conflict show signs of hybrid vigour for certain traits compared to their parental counterparts. This requires further investigation


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