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Title:	Evolution of reproductive traits have no apparent life-history associated cost in populations of <i>Drosophila melanogaster</i> selected for cold shock resistance
Authors:	Singh, Karan (/jspui/browse?type=author&value=Singh%2C+Karan) Kochar, Ekta (/jspui/browse?type=author&value=Kochar%2C+Ekta) Gahlot, Prakhar (/jspui/browse?type=author&value=Gahlot%2C+Prakhar) Bhatt, Karan (/jspui/browse?type=author&value=Bhatt%2C+Karan) Prasad, Nagaraj Guru (/jspui/browse?type=author&value=Prasad%2C+Nagaraj+Guru)
Keywords:	Evolution reproductive traits history <i>Drosophila</i>
Issue Date:	2021
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Abstract:	In insect species like <i>Drosophila melanogaster</i> , evolution of increased resistance or evolution of particular traits under specific environmental conditions can lead to energy trade-offs with other crucial life-history traits. Adaptation to cold stress can, in principle, involve modification of reproductive traits and physiological responses. Reproductive traits carry a substantial cost; and therefore, the evolution of reproductive traits in response to cold stress could potentially lead to trade-offs with other life-history traits. We have successfully selected replicate populations of <i>Drosophila melanogaster</i> for increased resistance to cold shock for over 33 generations. In these populations, the ability to recover from cold shock, mate, and lay fertile eggs 24 h post cold shock is under selection. These populations have evolved a suite of reproductive traits including increased egg viability, male mating ability, and siring ability post cold shock. These populations also show elevated mating rate both with and without cold shock. In the present study, we quantified a suite of life-history related traits in these populations to assess if evolution of cold shock resistance in these populations comes at a cost of other life-history traits.
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