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6 High rate of recent transposable element-induced adaptation in *Drosophila melanogaster*.

González J, Lenkov K, Lipatov M, Macpherson JM, Petrov DA
 PLoS Biol. 2008 Oct 21; 6(10):e251

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A general impression is that transposable element-induced adaptive mutations are frequent in laboratory populations of both *Drosophila* and *Escherichia coli*, but not in natural populations, suggesting that the results from experimental evolution may not be representative of evolution in nature. The authors of this paper found evidence to suggest that this may not actually be the case by uncovering 13 putatively adaptive transposable element-induced mutations associated with the recent expansion (10,000 to 16,000 years ago) of *Drosophila melanogaster* out of Africa.

The frequency of fixed transposable element-induced mutations (both neutral and adaptive) are one hundred fold lower than expected given the frequency of the adaptive transposable element-induced mutations in the out of Africa populations. Thus, it seems that transposable element-induced adaptive mutations are common in both laboratory and natural populations in the short term, but that they are eliminated over the long term. Consequently, the frequency spectrum of adaptive mutations in laboratory evolution experiments may be very different than the frequency spectrum of adaptive mutations fixed in natural populations, but that mutations found in laboratory experiments may not be that different than those found in natural populations undergoing rapid evolution.

Competing interests: None declared

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