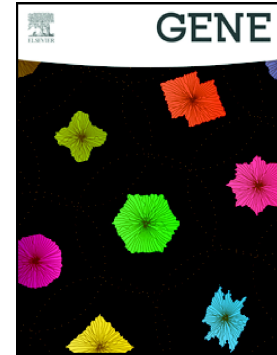


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## The somatic mobilization of transposable element *mariner-Mos1* during the *Drosophila* lifespan and its biological consequences

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### Abstract

Transposable elements (TEs) are mobile DNA sequences on genomes. Some elements are able to transpose in somatic cells, a process known as somatic transposition (ST), which has been associated with detrimental biological effects. The *mariner-Mos1* element of *Drosophila* promotes transposition in somatic and germline cells and is an excellent model for studies related to the biological consequence of somatic excision (SE). In this work, we used temperature stress to induce increasing transposition of *mariner-Mos1* during different stages of the development of *D. simulans*, aiming to quantify SE during lifespan. Furthermore, strains of *D. melanogaster* exhibiting differential expression of *mariner-Mos1* were employed for estimating some biological consequences of *mariner* mobilization. It is shown that SE of *mariner-Mos1* was not constant during development; the larval phase had the highest rates while the pupal stage exhibited lower rates, and in the embryonic stage, no difference was detected. SE can be detrimental, as suggested by correlation in SE level and reduction in behavioral activities and embryonic viability. This study showed that *mariner-Mos1* SE accumulates during the *Drosophila* life cycle, and can be involved in detrimental effects.

**Key words:** somatic transposition, transposons, transposon excision, genomic instability, aging.

### 1. Introduction

Until recently, there has been little interest in somatic transposition (ST) events as they are not heritable, and also because, normally, organisms have strong ST-silencing

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