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REPORT

## Ectopic Expression of Germline Genes Drives Malignant Brain Tumor Growth in *Drosophila*

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### ABSTRACT

Model organisms such as the fruit fly *Drosophila melanogaster* can help to elucidate the molecular basis of complex diseases such as cancer. Mutations in the *Drosophila* gene *lethal (3) malignant brain tumor* cause malignant growth in the larval brain. Here we show that *l(3)mbt* tumors exhibited a soma-to-germline transformation through the ectopic expression of genes normally required for germline stemness, fitness, or longevity. Orthologs of some of these genes were also expressed in human somatic tumors. In addition, inactivation of any of the germline genes *nanos*, *vasa*, *piwi*, or *aubergine* suppressed *l(3)mbt* malignant growth. Our results demonstrate that germline traits are necessary for tumor growth in this *Drosophila* model and suggest that inactivation of germline genes might have tumor-suppressing effects in other species.

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