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Analysis of Notch Signaling in Organized Tissue Growth

As organism develops, tissues are patterned along several axes during periods of extensive growth. In order for this to occur properly, specific organizer tissue is established through cell signaling. The establishment of the organizer has gross effects on the patterning and growth of the adjacent tissue. Therefore, it is necessary to place this organizer in a correct spatial pattern. It is well understood that these signaling events result in the formation of a lineage restriction that prevents cells from mixing. This results in a properly patterned organizer region. The D/V boundary within the developing *Drosophila* (*fruit fly*) wing is one such tissue that maintains an organizer as well as a restriction to cell mixing. It is known that the Notch receptor plays a role in both of these processes. However, it is unclear how activation of that receptor places a fence that prevents cells from migration into the adjacent compartment. This proposal aims to study key aspects that may aid our understanding of the progression of cancer. I propose to use the powerful tools available to *Drosophila* genetics in order to study the role of the Notch pathway in preventing cell mixing and cell movements at the D/V boundary.