Essential long-range action of Wingless/Wnt in adult intestinal compartmentalization

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Loss of Wingless signaling near compartment boundaries disrupts adult intestinal visceral muscle development.

The long-range action of Wingless/Wnt at compartment boundaries is essential for the development of the adult intestinal epithelium and overlying visceral muscles. Overexpression of Notum, a Wingless inhibitor, in the epithelium at the midgut-hindgut boundary and the adjacent posterior midgut results in extensive breaks and branches in the overlying longitudinal muscles and loss of the striated banding pattern of circular muscles (image). Similar muscle defects result from Wingless tethering at the midgut-hindgut boundary. Image credit: Ai Tian.