

How to Specify Yourself

Autocrine Regulation of the Micromere by Wnt from the Micromere

Another way micromeres retain their specification is to secrete an autocrine factor, Wnt8 (Angerer and Angerer 2000; Wikramanayake et al. 2004). As soon as the micromeres form, maternal β -catenin and Otx activate the *Blimp1* gene, whose product (in conjunction with more β -catenin) activates the *Wnt8* gene. Wnt8 protein is then received by the same micromeres that made it (i.e., autocrine regulation), activating the micromeres' own genes for β -catenin. Because β -catenin activates *Blimp1*, this autocrine regulation sets up a positive feedback loop between Blimp1 and Wnt8 that establishes a source of β -catenin for the micromere nuclei. Equally important, this cross-regulatory loop serves to lock both genes "on" and can amplify their expression levels.

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