

The Wnt-activated Xiro1 gene encodes a repressor that is essential for neural development and downregulates Bmp4

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In the early *Xenopus* embryo, the Xiro homeodomain proteins of the Iroquois (Iro) family control the expression of proneural genes and the size of the neural plate. We report that Xiro1 functions as a repressor that is strictly required for neural differentiation, even when the BMP4 pathway is impaired. We also show that Xiro1 and Bmp4 repress each other. Consistently, Xiro1 and Bmp4 have complementary patterns of expression during gastrulation. The expression of Xiro1 requires Wnt signaling. Thus, Xiro1 is probably a mediator of the known downregulation of Bmp4 by Wnt signaling.