Supporting Information

The regulatory proteins DSCR6 and Ezh2 oppositely regulate Stat3 transcriptional activity in mesoderm patterning during *Xenopus* development

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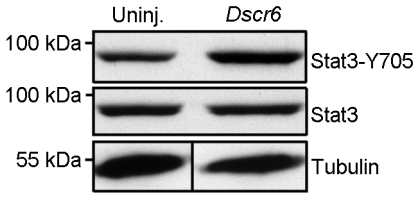

FIGURE S1. DSCR6 does not change Stat3 phosphorylation. Western blot analysis shows the expression level of Stat3-Y705P and total Stat3 in uninjected (uninj.) and *Dscr6* injected embryos at early gastrula stage. Tubulin is a loading control, and the protein bands were spliced from the corresponding lanes.

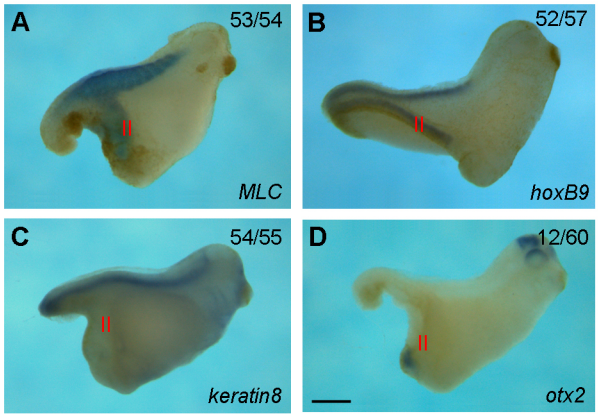

FIGURE S2. Characterization of Ezh2-H694L-induced secondary axis by in situ hybridization. (A) Somite marker. (B) Spinal cord marker. (C) Notochord marker. (D) Forebrain marker. Scale bar: (A-D) 500 μm.

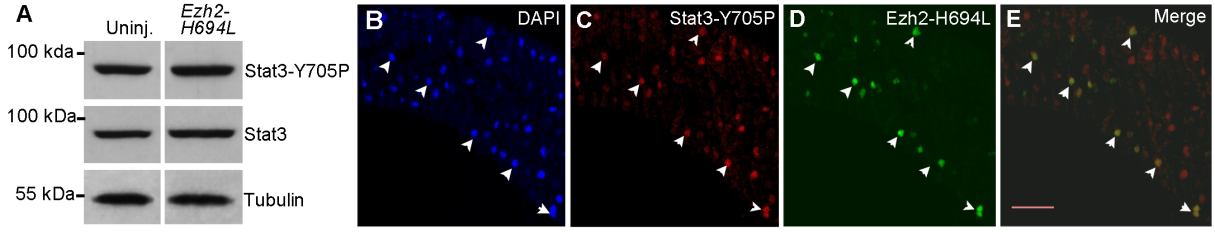

FIGURE S3. Ezh2-H694L does not affect Stat3 phosphorylation and nuclear localization. (A) Western blot analysis shows the expression level of Stat3-Y705P and total Stat3 in uninjected and *Ezh2-H694L*-injected embryos at early gastrula stage. Tubulin is a loading control. (B-E) Nuclear localization (arrowheads) of Stat3-Y705P in *Ezh2-H694L*-injected embryos. Scale bar: (B-E) 50 μm.

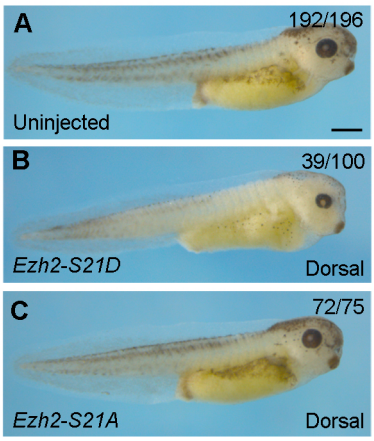

FIGURE S4. Differential effects of Ezh2-S21D and Ezh2-S21A on head development. (A) An uninjected larval stage embryo (stage 40). (B) Dorsal expression of Ezh2-S21D produces anterior deficiency. (C) Dorsal expression of Ezh2-S21A has no effect. Scale bar: (A-C) 500 μm.

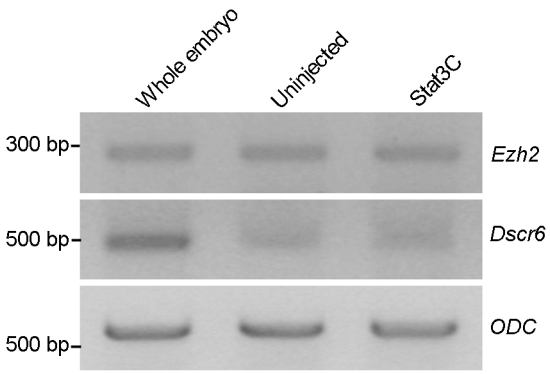

FIGURE S5. Stat3 does not affect *Ezh2* and *Dscr6* expression. RT-PCR analysis of ectoderm explants expressing Stat3C. The expression of *Ezh2* and *Dscr6* is unchanged at early gastrula stages. *Ornithine decarboxylase* (*ODC*) is an input control.