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SUPPLEMENTARY MATERIAL

corresponding to:

The *mob as tumor suppressor (mats1)* gene is required for growth control in developing zebrafish embryos

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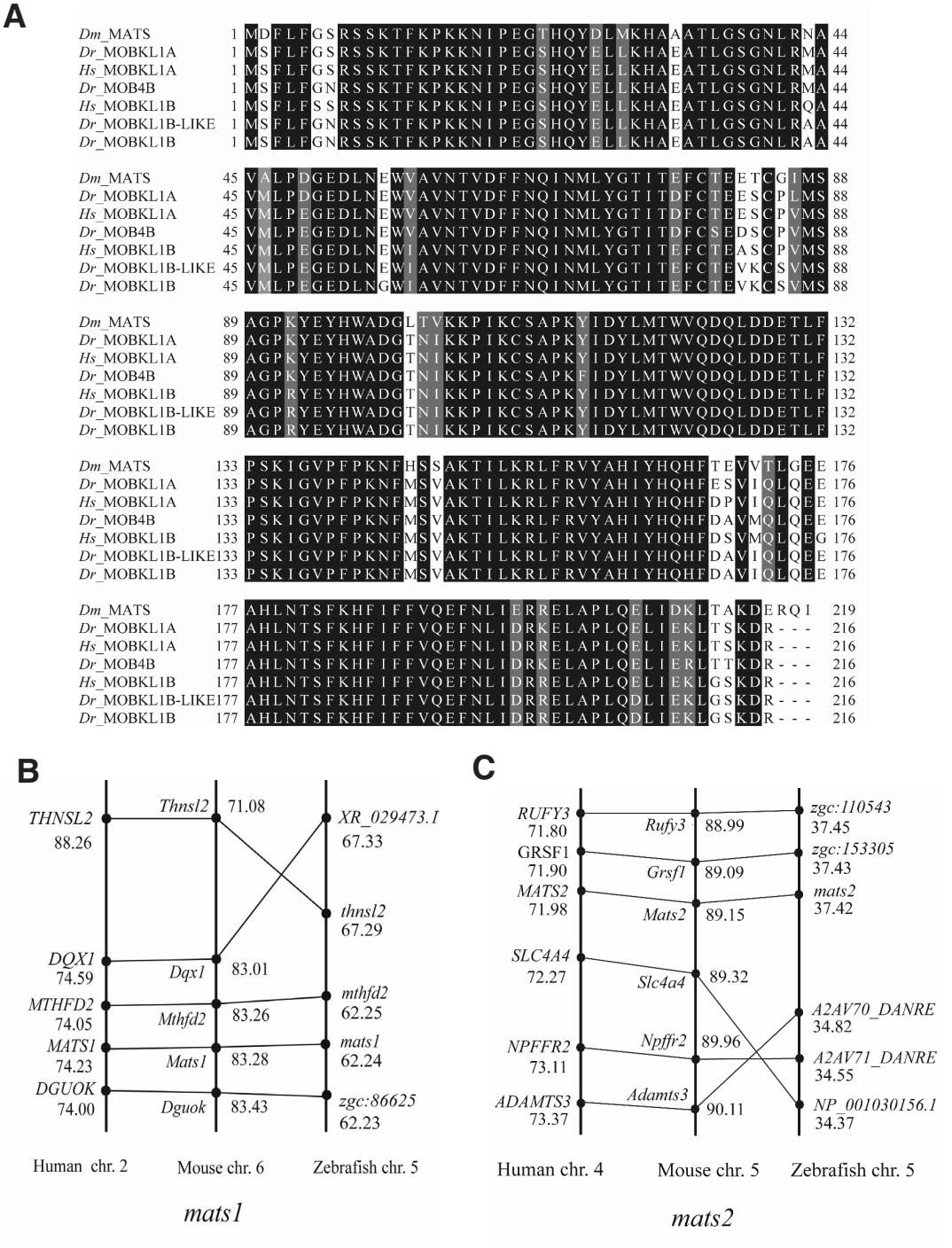

Fig. S1. Comparison of *mats* genes from *Drosophila*, zebrafish, mouse and human. *(A) Sequence alignment of Mats proteins from* Drosophila melanogaster, Danio rerio *and* Homo sapiens*. Identical amino acids are highlighted in black, similar amino acids are in grey, and different amino acids with a white background. (B, C) Synteny analysis of flanking regions of* mats1 *(B) and* mats2 *(C) genes from human, mouse and zebrafish. The chromosomal locations of genes are not in scale.*

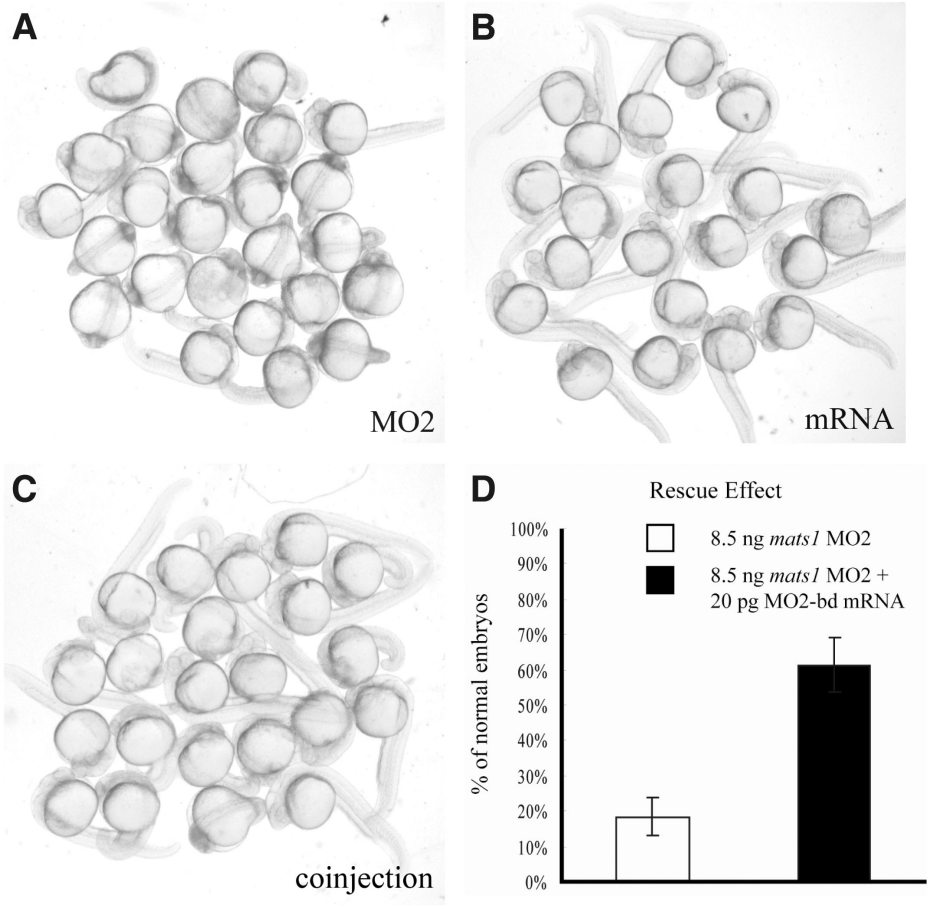

Fig. S2. Rescue of *mats1* MO2-induced developmental delay phenotype by MO2-bd *mats1* mRNA. *(A) Embryos injected with 8.5 ng* mats1 *MO2. (B) Embryos injected with 20 pg MO2-bd mRNA exhibited normal phenotype. (C) Most embryos co-injected with 20 pg MO2-bd mRNA and 8.5 ng* mats1 *MO2 showed normal or less severe abnormal phenotype. (D) Statistical analysis of rescue results. At 24 hpf, only 18% (n=182) of the* mats1 *MO2 morphant embryos were normal. However, co-injection of 20 pg MO2-bd mRNA with* mats1 *MO2 made 61% (n=150) of the embryos to become normal (T-test, p < 0.05).*

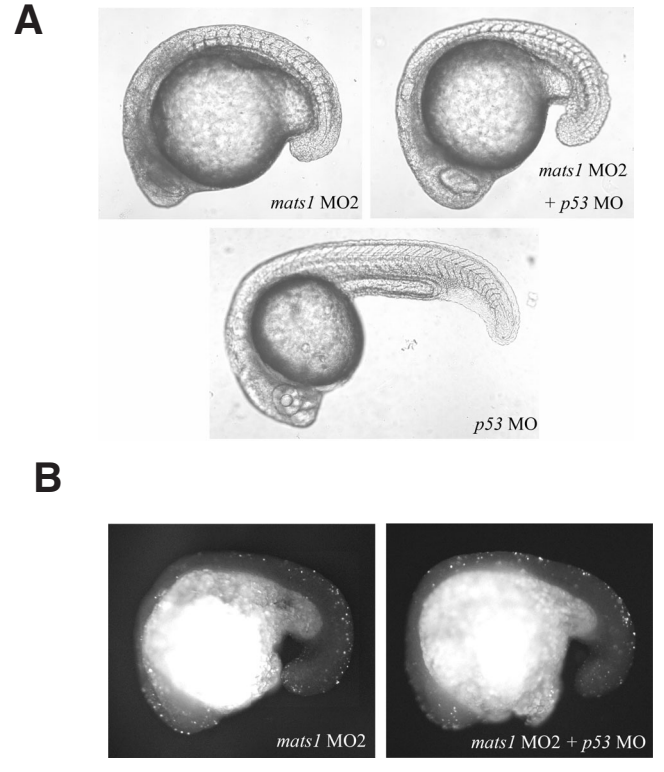

Fig. S3. Phenotypes of *mats1* morphants were not caused by off-target *p53* activation. *(A) The* mats1/p53 *morphant embryos still exhibited the developmental delay phenotype. Embryos injected with 17 ng* p53 *MO didn't show any abnormal phenotype. When coinjected with 17 ng* p53 *MO plus 8.5 ng* mats1 *MO2, the severe developmental delay phenotype still exist, but the small, dark, necrotic heads phenotype was lessened. (B) The* mats1/p53 *double knockdown embryos still exhibited excessive apoptosis as demonstrated by TUNEL staining, with decreased signal in head region. Anterior is towards left and dorsal towards top in all panels.*

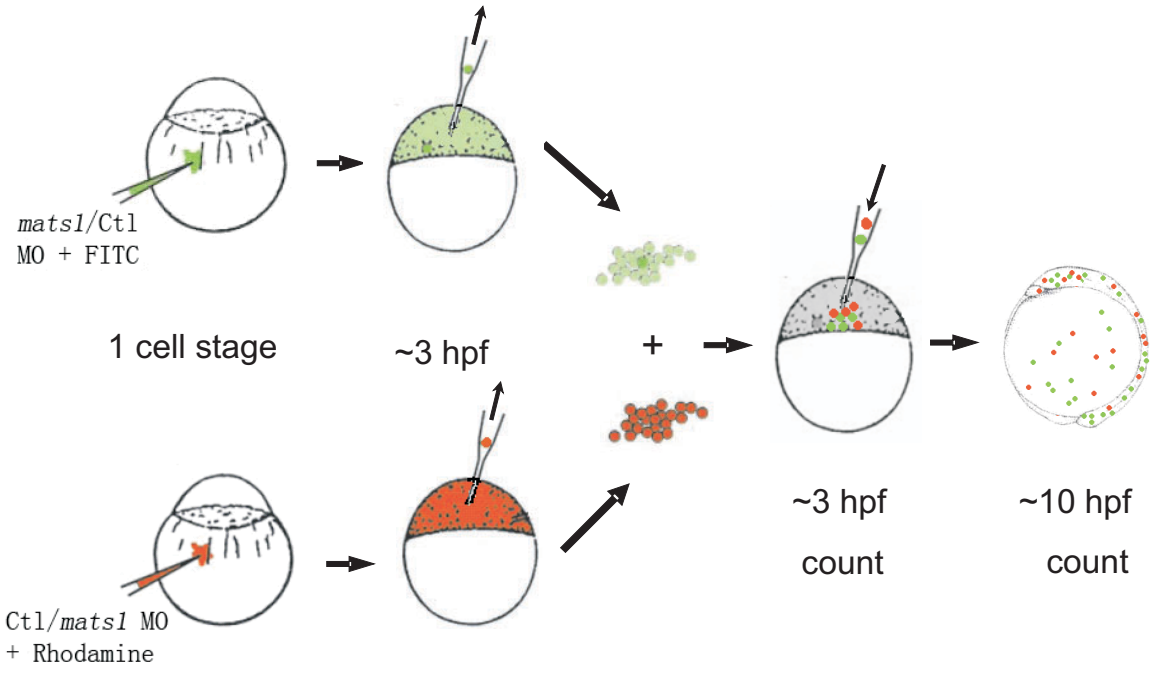

Fig. S4. Transplantation of labeled *mats1* morphant cells and wild-type cells to generate chimeric zebrafish embryos. *Schematic illustration of the transplantation experiment is shown.* mats1 *MO2 mixed with a dye (e.g. FITC) was injected into embryos at the 1-cell stage. The control MO mixed with a different dye (e.g. Rhodamine) was similarly injected. At the 3-4 hpf stage, FITC-labeled* mats1 *morphant cells and Rhodamine-labeled control cells were collected and mixed before transferring to wild-type embryos at the 3-4 hpf stage. Cell number was counted under a fluorescent microscope when transplantation was done, and counted again at the 10 hpf stage. Cell number at 10 hpf divided by cell number at 3-4 hpf is defined as proliferation index (PI) to show cell proliferation ability. In another experiment,* mats1 *morphant cells labeled with Rhadomine were also tested for their ability to proliferate compared to FITC-labeled control cells. For additional control experiments, cells containing only FITC or Rhadomine were also tested in this assay.*