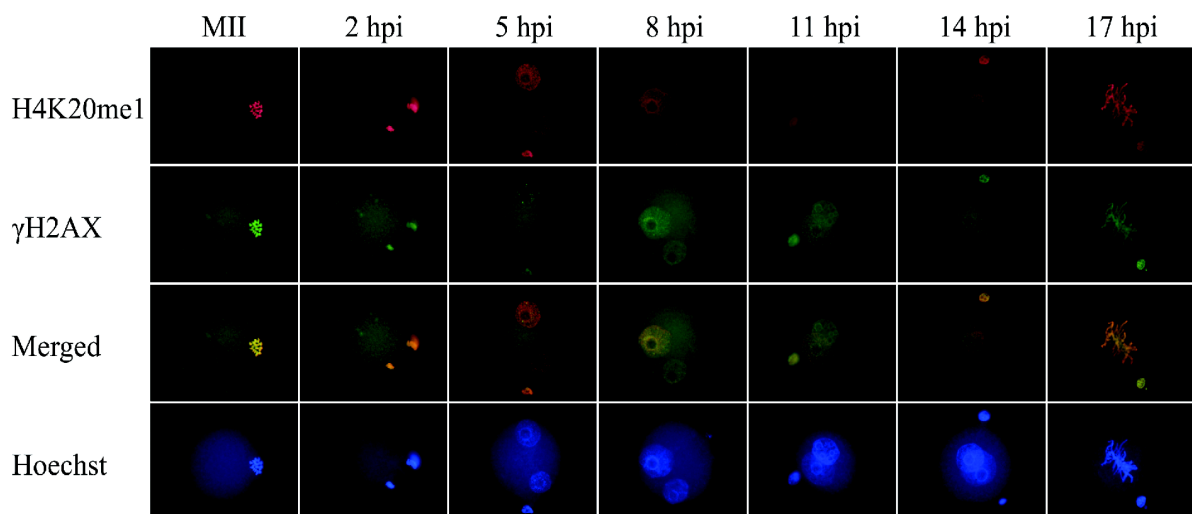


**Supplementary Fig. 1.** Effect of H4K20M overexpression on the level of H4K20me3. Embryos overexpressing H4K20WT (n = 9) and H4K20M (n = 10) show the same level of H4K20me3 at 34 hpi. Scale bar, 10  $\mu$ m.



**Supplementary Fig. 2.** Levels of H4K20me1 and  $\gamma$ H2AX in the first cell cycle. Embryos were fixed at the indicated times (MII, n = 19; 2 hpi, n = 18; 5 hpi, n = 12; 8 hpi, n = 16; 11 hpi, n = 18; 14 hpi, n = 17; 17 hpi, n = 15) and stained with H4K20me1 and  $\gamma$ H2AX antibodies. Merged images of H4K20me1 (red) and  $\gamma$ H2AX (green) stained samples were shown. The amount of H4K20me1 was almost the same throughout the first cell cycle of zygotes, whereas the amount of  $\gamma$ H2AX was high at S (8 and 11 hpi) and M (2 and 17 hpi) phases, and low at G1 (5 hpi) and G2 (14 hpi) phases. Scale bar, 10  $\mu$ m.