

Developmental and gene expression changes after parental exposure to metal in the sea urchin

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**Supplementary file
(Fig.S1 and S2)**

Figure S1. original Western blot results for HSP70, HSP60, and HSP90 expression in testis and ovary referred to Figure 1 C, D, E.

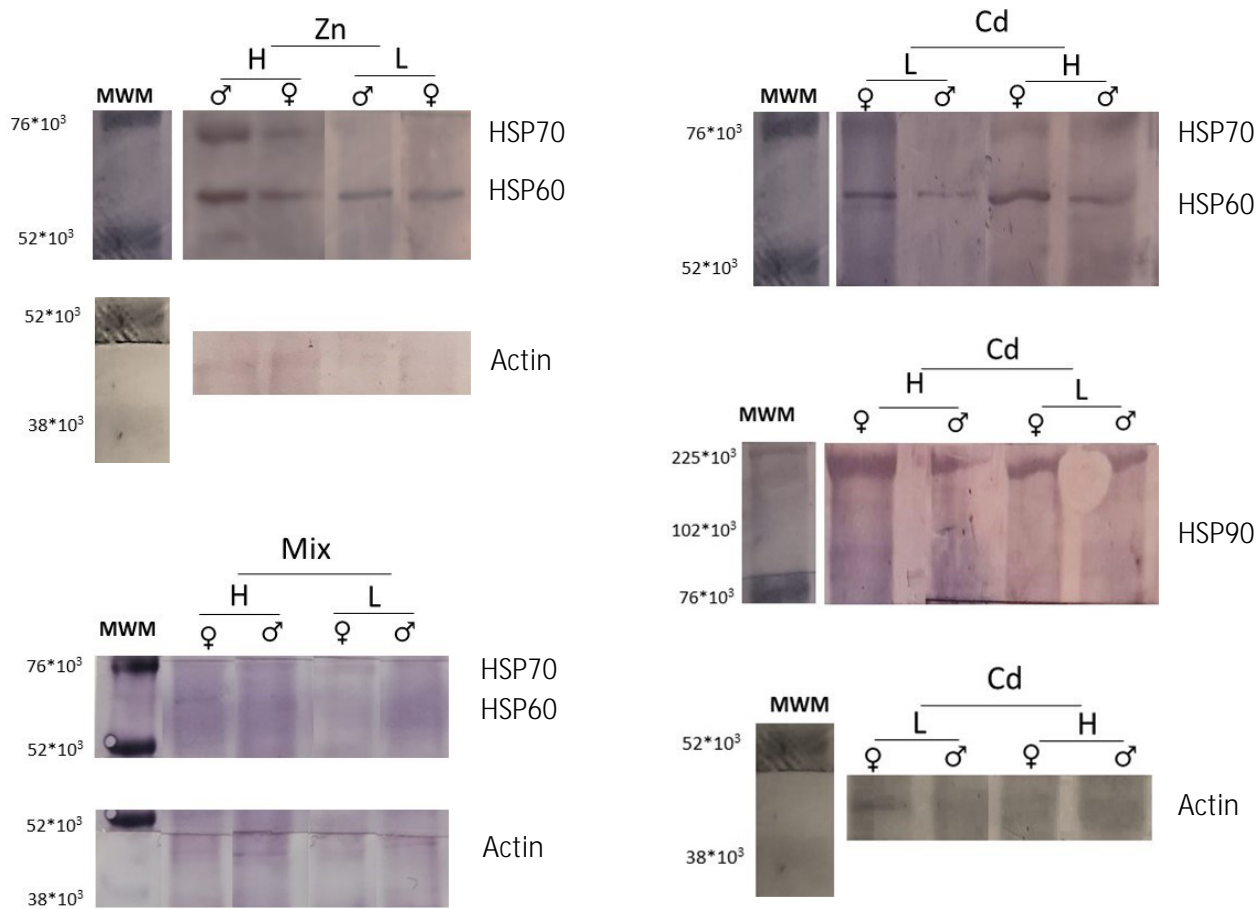
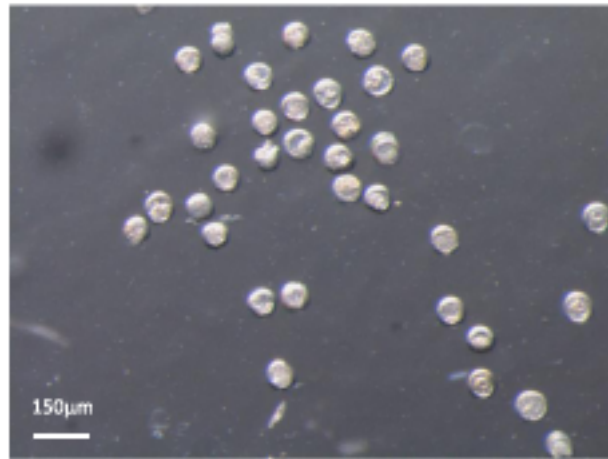


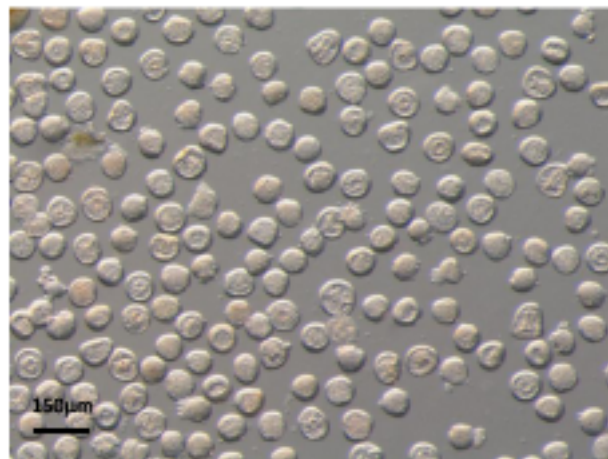
Figure S2. *P. lividus* embryos from parentals exposed to Cd, Zn and Mix of the two metals at 24 and 48 hpf.

Typically, 24 hpf gastrulae show archenteron (a short stub-like gut rudiment) formed and extended until at least halfway. In early gastrulae a ring-like arrangement of PMCs (primary mesenchyme cells) is formed, surrounding the invaginating archenteron but the archenteron invagination is still starting. Normally, the PMCs are not uniformly distributed but assemble to form spiculogenic syncytia. Abnormal gastrulae (more or less early) show altered archenteron invagination and/or altered patterns of PMCs distribution in the blastocoel. Later in development, this causes abnormal skeletons and altered shapes of larvae, that we categorized as “abnormal pluteus”.

P.lividus embryos from parentals exposed to Cd L at 24hpf



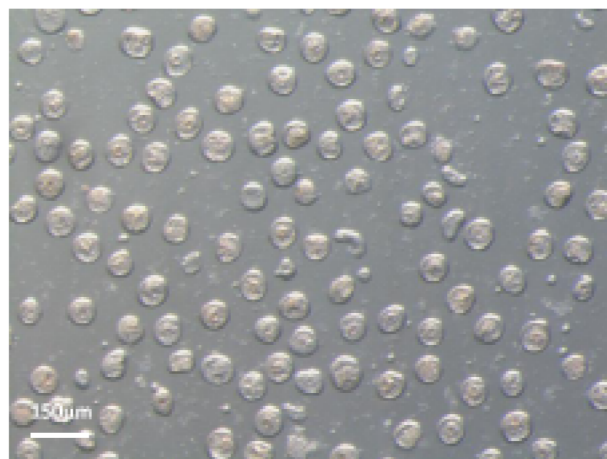
P.lividus embryos from parentals exposed to Cd L at 48 hpf



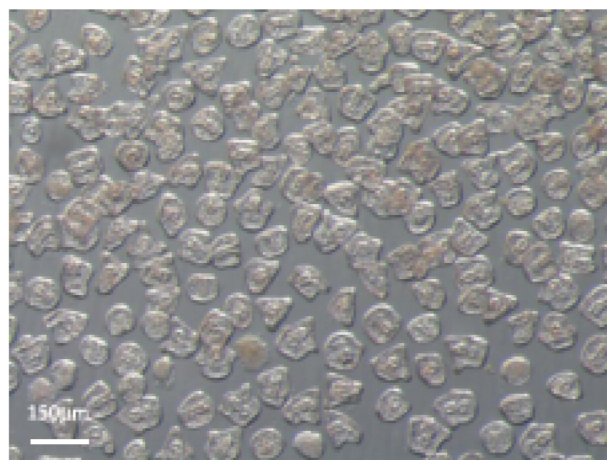
P. lividus embryos from parentals exposed to Cd H at 24 hpf



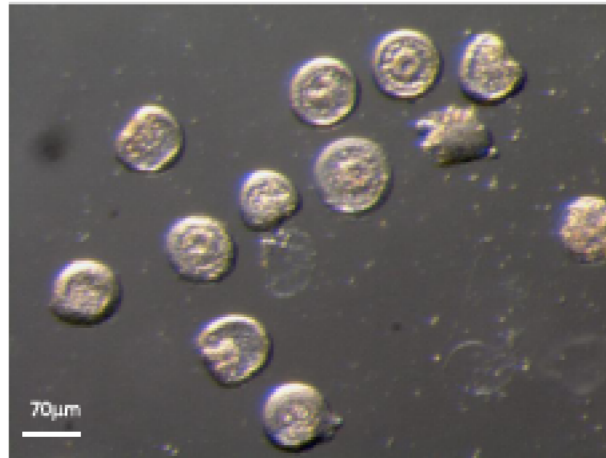
P. lividus embryos from parentals exposed to Zn L at 24 hpf



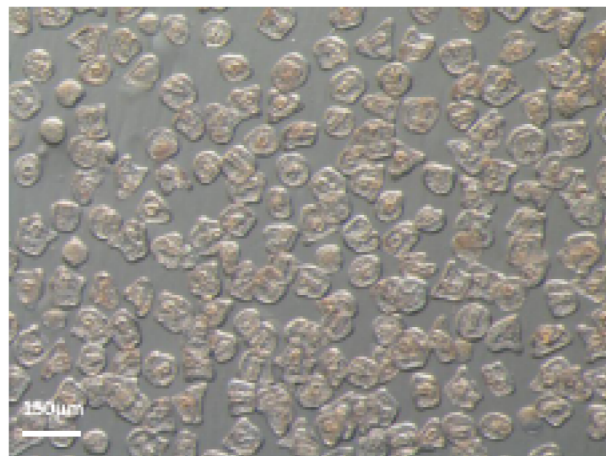
P. lividus embryos from parentals exposed to Zn L at 48 hpf



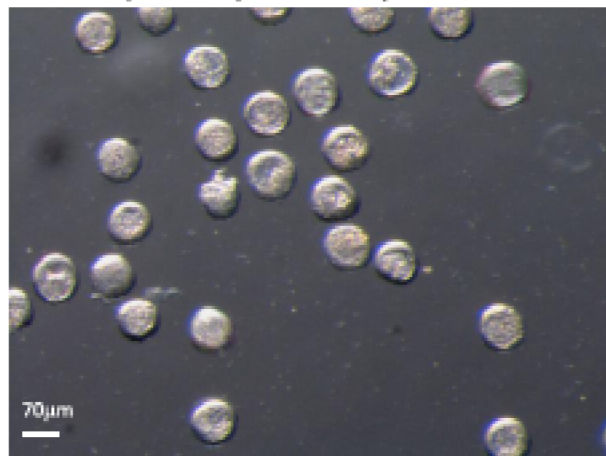
P.lividus embryos from parentals exposed to Zn H at 24hpf



P.lividus embryos from parentals exposed to Zn H at 48hpf



P.lividus embryos from parentals exposed to Mix L at 24 hpf



P. lividus embryos from parentals exposed to Mix L at 48 hpf

