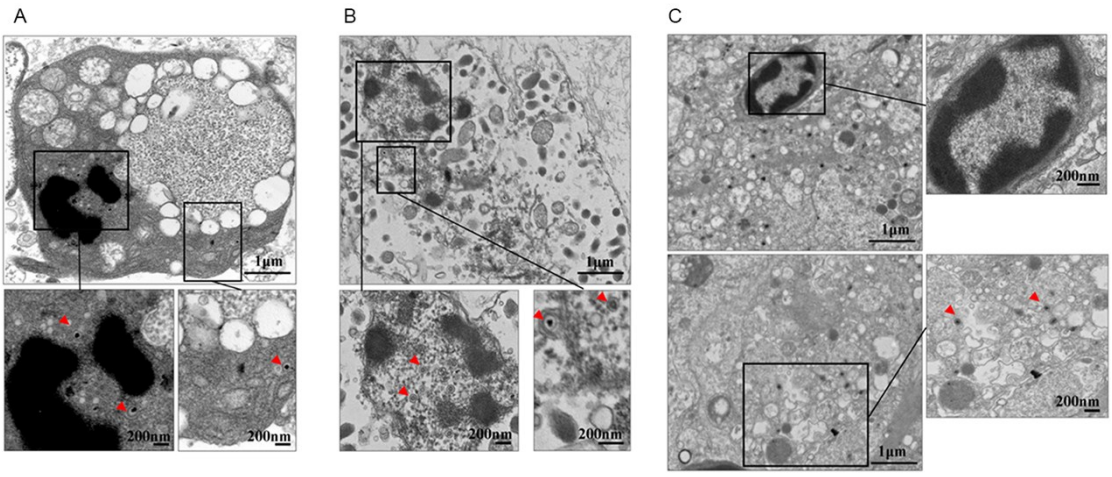

Fig.S1. Transmission electron microscopy confirmation of OsHV-1 infection in ark clams. Tissues, (A) Hemocytes, (B) Mantle, (C) Hepatopancreas, were examined at 72 hpi. Arrows indicate OsHV-1 particles.

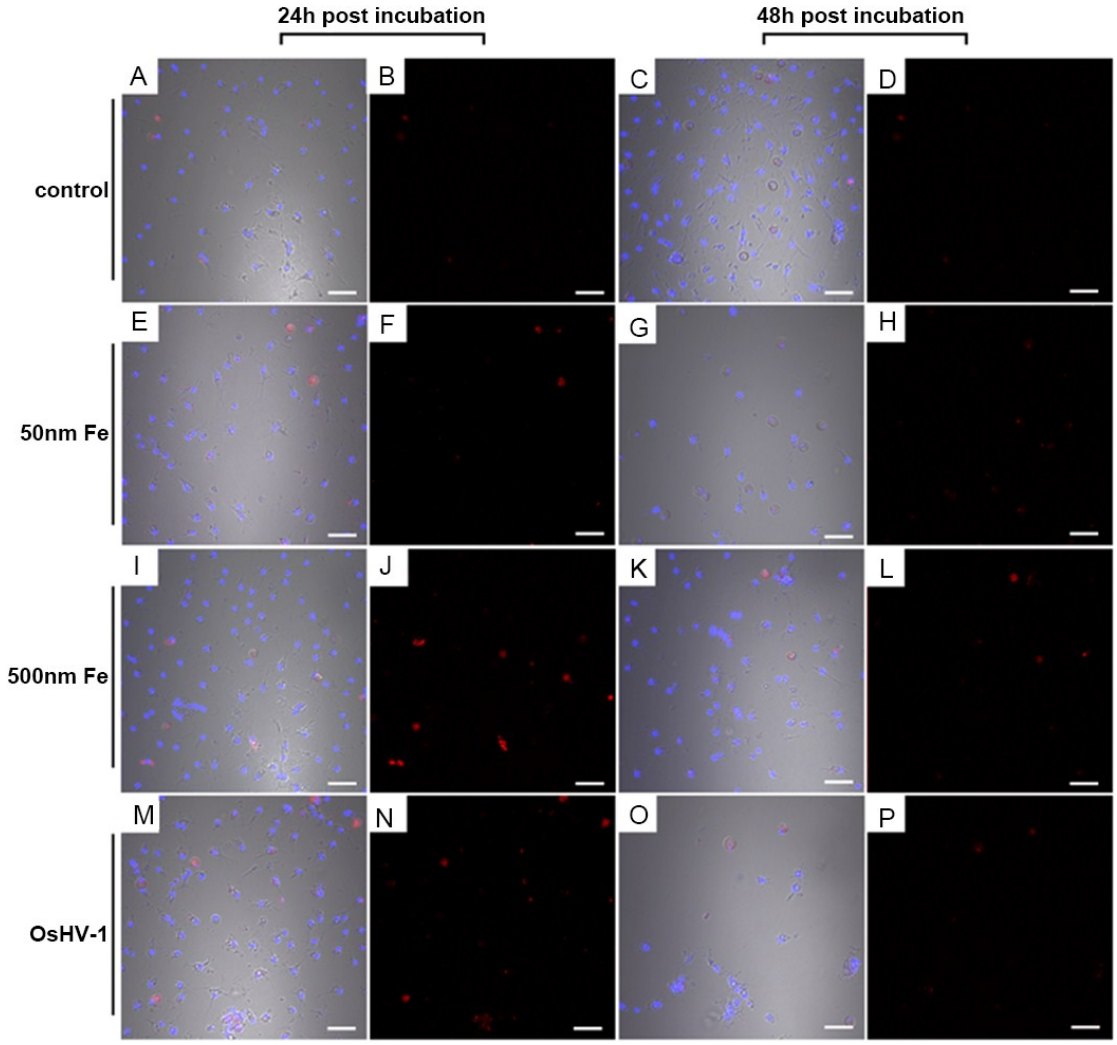

Fig.S2. ROS generation of in vitro hemocytes was promoted under incubation with high level iron and OsHV-1. (A-D) Normal cultured hemocytes were set as the control group. Few ROS signal (red) could be detected. (E-H), (I-L) Hemocytes under incubation with supplemented 50 nm and 500 nm iron respectively. More ROS signal (red) was found. The amount of adherent hemocytes decreased after 72 h incubation with supplemented 50 nm and 500 nm iron. Hemocytes incubated with OsHV-1 also showed more ROS signal (red) (M-P). (scale bar = 50 μm).

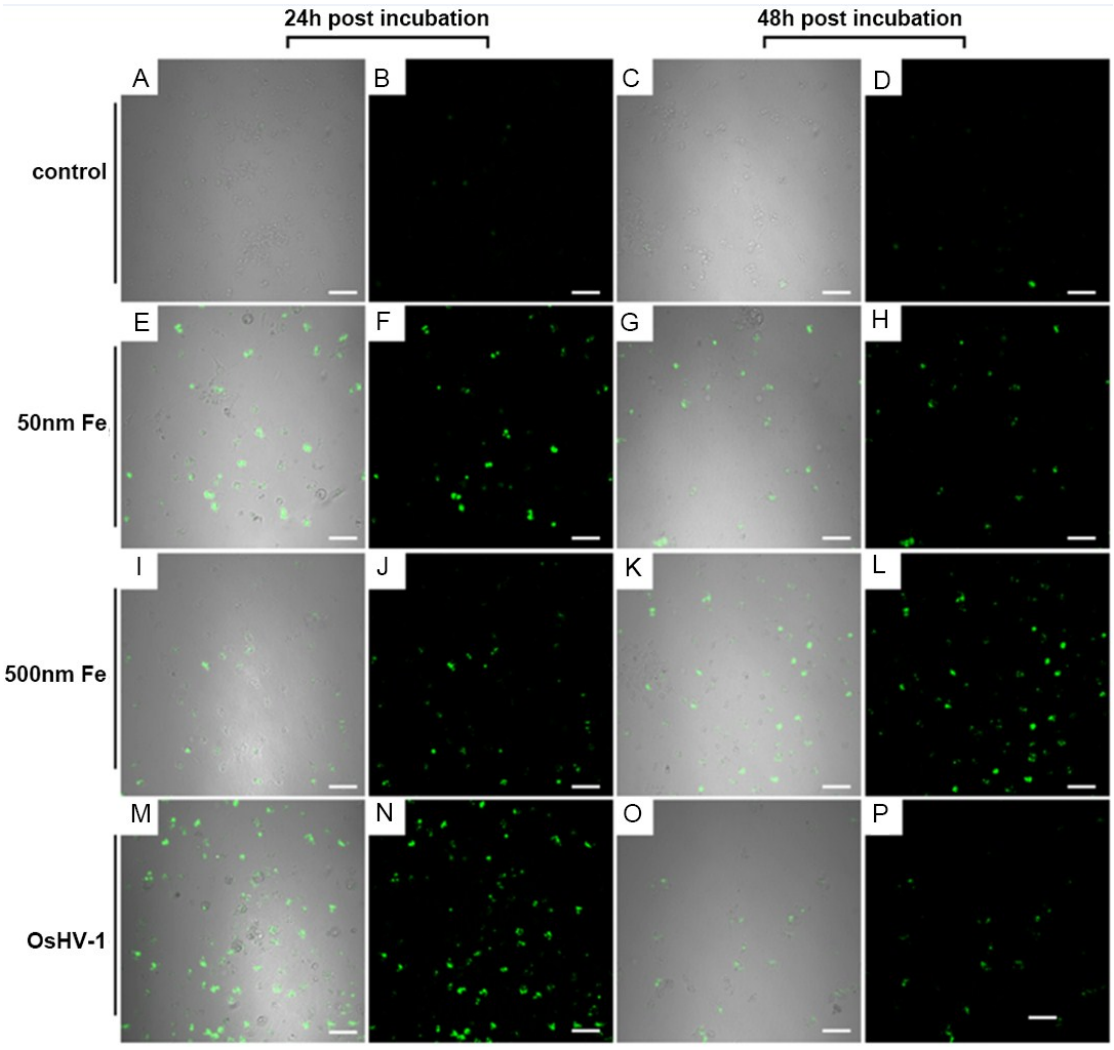

Fig.S3. Hemocyte death in vitro was induced under incubation with high level iron and OsHV-1. (scale bar = 50 μm) (A-D) Normal cultured hemocytes were set as the control group. Few dying hemocyte signal (green) was detected. The increase of dying hemocyte signal (green) cloud be observed in (E-H), (I-L) Hemocytes under incubation with supplemented 50 nm and 500 nm iron respectively; and in (M-P) Hemocytes incubated with OsHV-1.

The promotion of ROS and cell death by the incubation with high level iron and OsHV-1

The fluorescent indicator 2',7'-dichlorofluorescein (DCF) was used to monitor the levels of intracellular ROS in hemocytes under supplement iron incubation and OsHV-1 infection (Fig. S2). The results showed that the DCF fluorescence signals (red) were enhanced at 24 h under iron incubation with 50 nM and 500 nM supplement iron, and comparatively weakened from 24 h to 48 h with decreasing adherent hemocytes, which was similar to the results under OsHV-1 infection. TUNEL assay were undertaken to determine the effect of the incubation with supplementary iron and OsHV-1 on DNA damage in hemocytes (Fig. S3). The results showed that the positive signals (green) were promoted at 24 h under supplementary iron (50 nM and 500 nM) and OsHV-1 incubation. From 24 h to 48 h, the positive signal also weakened as the adherent hemocytes decreasing.